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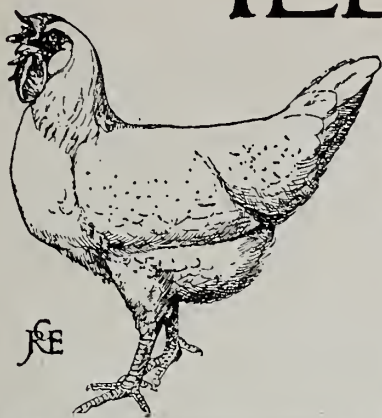


White Orpington Cockerel.

1st and Cockerel Challenge Cup, White Orpington Club Show, Sutton Coldfield 1909

BRED BY AND THE PROPERTY OF MR. W. M. BELL.

THE ILLUSTRATED POULTRY RECORD



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EDITORIAL NOTICES.

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The Editor will be glad to consider any MSS., photographs, or sketches submitted to him, but they should be accompanied by stamped addressed envelopes for return if unsuitable. In case of loss or injury he cannot hold himself responsible for MSS., photographs, or sketches, and publication in the ILLUSTRATED POULTRY RECORD can alone be taken as evidence of acceptance. The name and address of the owner should be placed on the back of all pictures and MSS. All rights of reproduction and translation are reserved.

The Editor will be glad to hear from readers on any Poultry Topics, and all Queries addressed to the paper will be answered by experts in the several departments. The desire is to help those who are in difficulty regarding the management of their poultry, and accordingly no charge for answering such queries is made.

The Annual Subscription to the ILLUSTRATED POULTRY RECORD at home and abroad is 8s., including postage, except in Canada, in which case it is 7s. Cheques and P.O.O.'s should be made payable to Brown, Dobson, and Co., Limited.

The ILLUSTRATED POULTRY RECORD is published on the first of every month. Should readers experience any difficulty in securing their copies promptly they are requested to communicate immediately with the Editor. The latest date for receiving advertisements is the 20th of the month preceding date of issue.

The utmost care is exercised to exclude all advertisements of a doubtful character. If any reader has substantial grounds for complaint against an advertiser he is requested to communicate at once with the Editor.

King Edward VII.

Since the last issue of the POULTRY RECORD every section of the British Empire and of its peoples has been plunged into grief by the almost sudden death of its great Monarch, King Edward VII. As to the wider issues involved by this event, world-wide reaching as they must be, we are not here concerned, except to express our deep sorrow at the loss of one who has done so much to foster the welfare of his people, by whom he was beloved for his own sake and for what he has done, and of heartfelt sympathy with Queen Alexandra in her deep sorrow. Nor is it necessary to do more than express our hopes for a long and peaceful reign to King George V. King Edward was remarkable for the breadth of his interests and sympathies. Although he was not directly a breeder of poultry, we believe he always took a keen interest in the poultry establishment of Her Majesty Queen Alexandra, who has been a breeder of fowls for many years. And, further, at the Royal and Smithfield Shows His late Majesty on several occasions visited the poultry sections, and those who had the honour of conducting him round the exhibits were gratified at the appreciation with which he spoke of the efforts made for the development of this class of live stock. It is known that in private King Edward VII. encouraged the extension of poultry-breeding and -production, which greatly encouraged those who are engaged in this pursuit. We believe that the poultry establishment at Osborne was directly the result of His late Majesty's suggestion.

Export Trade in Live Stock.

The President of the Board of Agriculture and Fisheries has appointed a Departmental

Committee to inquire as to the character and extent of the British export trade in live stock, including poultry, with the Colonies and other countries, and to consider whether any steps can with advantage be taken by the Board, or otherwise, with a view to its development. The committee, of which Sir Edward Strachey, Bart., M.P., is chairman, propose to consider two main subjects—namely (1), Means for directly encouraging trade, and (2) Means for removing hindrances to such trade. The committee is generally representative, but, unfortunately, no member can be said to know the special conditions and requirements of poultry-breeders, and it is greatly to be regretted that such should be the case. Under these circumstances, it is important that those interested in the poultry industry should bring before the committee evidence with a view to helping forward a trade capable of vast extension. From the establishment of the POULTRY RECORD we have endeavoured to assist British poultry-breeders, and with a large amount of success. Given, however, that the Board of Agriculture, as a result of this committee, adopts measures in stimulation of Colonial and foreign business, it is most important that poultry shall receive adequate attention. Breeders and others who desire to submit evidence should communicate with the secretary, Mr. A. E. Balleine, 4, Whitehall Place, London, S.W.

Trade Trickery.

The Irish Department of Agriculture is to be warmly congratulated upon its successful prosecution of the Oxford Co-operative and Industrial Society for selling Styrian eggs as Irish, and we hope it will continue its investigations and efforts in the same direction with equal success. Unfortunately it is very seldom that so clear a case can be made out. The methods are generally too subtle to come within the law. Labels, whilst misleading, are made indefinite, even when descriptions are given at all. The use of such terms as "new laid," "country eggs," &c., are meant to suggest that the goods are of home production, but it is questionable whether any magistrate would convict where these are used for foreign eggs. Evidence reaches us from many parts of the country that the old practice of repacking foreign eggs in boxes and hampers has broken out again, due to the shortage of British supplies. Letters in the *Glasgow Herald* have shown that the custom is not unknown there, but in that case Irish are repacked as Scottish, as well as foreign as Irish. In many instances small dealers from country districts, who have a private trade, buy case eggs and sell them presumably as if they had come from their

own hens. The difficulty is to prove false descriptions, for those guilty of these practices are clever enough to avoid making statements which bring them within the meshes of the law. The remedy is marking of home produce and punishment for those who can be caught, as at Oxford. Reports from America show that the same system is in vogue there, only all the produce is native, which makes the problem more perplexing.

A Notable Handbook.

As a first step in the promotion of such an object the Board of Agriculture is to be congratulated upon the publication of a handbook entitled "British Breeds of Live Stock," which, beautifully printed and illustrated, contains in its 137 pages succinct descriptions of the various races, including poultry, together with a list of the various breed societies. This is a direct result of the Royal Exhibitions Commission, of which King George V., as Prince of Wales, is President, and to which reference has previously been made in these pages. The handbook, of which editions in English, French, German, and Spanish have been issued, will this year be disseminated at the Brussels and Buenos Ayres Exhibitions, and should bring a large accession of business to British breeders. It is the first time, we believe, that a definite effort has been made by the Board of Agriculture to help live stock interests by placing before Colonial and foreign buyers information and facts not easily otherwise obtainable.

Poultry Leaflets in Welsh.

The report received of the last committee meeting of the National Poultry Organisation Society announced that a resolution had been passed suggesting to the Board of Agriculture that its leaflets should be issued in Welsh for the benefit of residents in the Principality. In view of the wide interest awakened by the publication of the "Record Poultry Book" in that language, under the title of "Llyfr Dofednod y Record," and the warm welcome accorded to this effort of the POULTRY RECORD, we were specially interested to learn whether there was any prospect of the authorities at Whitehall Place adopting this excellent suggestion. On telephoning to the above Society at Regent House, we were gratified to learn that a reply has been received to the effect that the Board of Agriculture has decided in favour of the proposal, upon which we cordially congratulate it and the N.P.O.S. If no other result followed the Welsh tour that would be a great gain, but we are confident it will lead to wide developments all over Wales.

Influence of North v. South.

The multitude of problems of importance to the poultry-breeder, each of which may influence his work, presenting themselves for investigation are overwhelming. The further we advance, the less we know. Our pursuit was comparatively simple so long as it was nothing but a pastime. A few hens about the farm-yard or back door, finding a considerable portion of their food and eating the household scraps, what did it matter whether they were profitable or not? If any were sick, they died or got well as the case might be. As for knowing anything about the various "itises" into which diseases are now sub-divided, no one thought of it. Now we cannot ignore anything of that kind. We are led to these observations by a remark recently made in our hearing, originating probably with M. Louis Vander-Snickt, whose fertile mind is ever suggestive, to the effect that breeders should study natural conditions far more than is now the case. For

speculation. We all know that sojourn in a warm, soft climate kills the desire for exercise, and leads to indolence and to general softness of muscle, and that, on the other hand, a change to cooler conditions means exhilaration and activity. If that is so in connection with human beings even temporarily, may it not be so to an even greater extent with fowls and animals permanently transferred to new conditions? The question is certainly worth study, as much in a small country like the United Kingdom as in those lands whose areas cover several degrees of latitude.

Poultry v. Sheep.

The last Royal Commission on Agriculture paid considerable attention to poultry. An Assistant Commissioner (Mr. R. Henry Rew, now head of the Statistical Branch of the Board of Agriculture) reported on the Poultry-Rearing and Fattening Industry in the Heathfield District of Sussex. That was sixteen years



JUNE SHADE AND WHITE WYANDOTTES

[Copyright.]

instance, take the theory that the transference of fowls or animals from south to north—that is, from a warm to a cool climate—tends to increased fecundity, which in the case of hens would mean greater egg-production, and that to transfer from north to south has the effect of increasing the flesh and decreasing the laying. At first sight it might appear that this was a doubtful theory, but there is more in it than

ago, but the report stands as a valuable record. In it Mr. Rew stated that he had interviewed a farmer occupying 240 acres, whose overturn in eggs and poultry amounted to more than £300 per annum. This man said: "If 100 hens are properly looked after they will yield a larger return in twelve months than 100 breeding-ewes." As Mr. Rew observed: "This, from a practical farmer who keeps both hens and

ewes, is, I think, noteworthy." That is, however, by no means a unique case. Recently we visited a South Country farmer who said that he found in a good season his breeding-ewes did very well indeed if they brought him in, through the lambs, an average of 35s. each. On the other hand, by keeping the right class of fowl, and hatching early enough, it was a bad season if he did not produce an average of twelve to fifteen chickens from every hen, and sell them for 35s. to 45s. The labour with poultry was rather heavier than with sheep, but taking into account land occupied, food, &c., he always found that the fowls yielded the greater profit. *Verb. sap.*

Encouragement for New Breeds.

Considering that so many fanciers are at the present time engaged in producing new varieties, and that exhibition breeders stand to gain much by the introduction of some meritorious new breeds, it is strange that no encouragement is given to novelty producers at the great shows. The treatment they receive is, indeed, somewhat discouraging, for in the ordinary course new varieties have to take refuge in the "variety" classes, where they come into competition with old-established breeds and suffer much in comparison, besides being overlooked, for it is customary for newspaper reports to refer to winners only, and frequently interesting novelties are passed without comment. We would suggest that in order to encourage breeders of new varieties one of our great shows—say, the International—should provide a special class for novelties, and offer a substantial award for the most meritorious introduction of the season. It would create a great amount of public interest and stimulate the efforts of breeders, for a novelty securing such a coveted award would be reasonably certain of popularity. In the horticultural world new plants are submitted for the award of a committee of the Royal Horticultural Society, and there appears no reason why breeders of novelties should not submit a trio (a male and two females) to the judgment of a committee of our leading judges at one of the great shows.

Mating Competition Pullets.

Egg-laying competitions and questions concerning their conduct naturally occupy the attention of Australian poultry-keepers at a season when such matters are less prominent with us, and it is of interest to note that some of the competing breeders have again raised the vexed question of the advisability of mating pullets during the time of the tests. The opinion appears to be steadily gaining ground

that male birds have no business to be in the pens, that those who wish for the eggs of the birds taking part in a competition should wait until the following season, and that the eggs will then be better worth incubating. The factor of expense is one that will probably influence the course of events in the desired direction, it being suggested that although the Agricultural Department concerned takes a commission for the eggs sold for setting it is extremely doubtful whether it pays for the extra labour involved. Moreover, the eggs from the mated pens that are not sold for setting require to be rendered unhatchable before sale for other purposes, and are to that extent inferior. It is certain that the weight of practical experience in this country confirms the opinion of the objecting Australians upon the broad basis of the undesirability of mating competition pullets. A suitable reproductive condition requires a fuller maturity than is generally present and greater vigour than is compatible with the circumstances of the average test.

Egg Records.

The publication by the Department of Agriculture for Ireland of a year's work in connection with the keeping of egg records furnishes more than sufficient proof of the need and use of such a method and the lessons it must necessarily force upon the attention of producers as a whole. It is pointed out that upon the estimated cost of feeding under the conditions prevailing in Ireland and the prices locally obtainable for eggs each hen should lay not less than eighty eggs per annum to cover the cost and return some slight profit. The records indicate that there must be many flocks giving averages below sixty eggs, and unless they attain that smaller total it is suggested that they fail to pay for food. In all some 118 flocks were entered for record-keeping, but inasmuch as several of the poultry-keepers concerned failed to complete their annual records, or broke up or changed their pens during the year, the published results are only complete in respect to 78 flocks. The general average for the latter was a little more than 109 eggs per bird per year, and although some approached 200 others approximated to 50. In all, 45 flocks yielded over 100 eggs per bird annually, and 33 were below the 100. Making due allowance for other causes of difference, it is evident that the chief reason is that of the variations due to strain, and the method of keeping these records provides an object-lesson the more in addition to that of the centralised laying competitions.

THE INFLUENCE OF COCK - FIGHTING.

EVERYTHING has its use, and every sport its virtue, if we can only discover what that is. In judging any pursuit, however, it is not sufficient to think of the good in it, but we must measure the hurtful, or evil, also. Ignoring one or the other is equally a mistake. To break-in a horse is a painful process to the animal, but the gain is much greater. One cannot be secured without the other. In speaking of cocking, or cock-fighting, there is no desire to defend it as a sport. Its devotees have often claimed that the birds revelled in

breeding on definite lines, to selection for a specific purpose, to increase of number of poultry kept. Then it helped in the dissemination and distribution of the fowls over the greater part of the known world. What first attracted the Persians and afterwards the Athenians was not a possibility of increasing the supply of food, but the pleasure of witnessing the battles of Gamecocks. Such was also the case in Malaya, in North Africa, and in pre-Roman Britain, so continuing until recent days. And, further, the very qualities needed



SET-TO.

the battle, which is probably true, but when they claimed that to be sufficient justification the premiss is unsound. It has even been said that eels enjoy skinning. Maybe the Grand Inquisitors persuaded themselves that as heretics rejoiced in martyrdom, subjecting them to the *auto-da-fé* was praiseworthy.

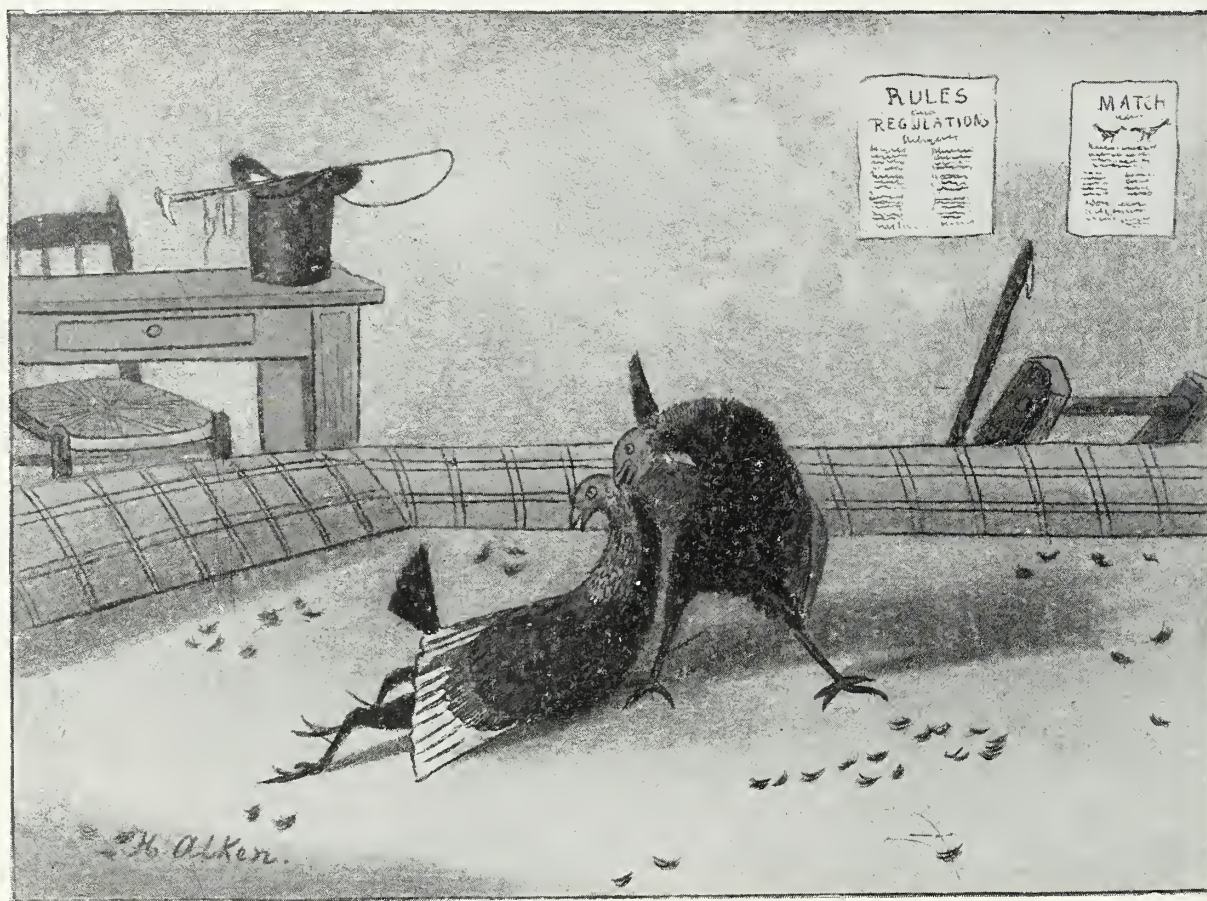
In spite of all this, it would be folly to deny that in cock- and bull-fighting alike there was some gain, especially in regard to the development of the fowl and animal bred for this purpose. First and foremost this sport led to

for the attainment of success in the cock-pit, unintentionally on the part of breeders, developed those breast muscles which give the greatest value to fowls in respect to food-production. Continued through many centuries, we have the explanation why the Game-fowl has been one of the finest of races in the quality and quantity of its breast meat. Size and strength of wings, together with activity of body and vigour of constitution, are essential factors. What wonder, therefore, in days when the sufferings of human beings were disregarded,

that pleasure was obtained which involved pain to the lower animals. The records of less than a hundred years ago are full of what we now shudder to contemplate, though we are by no means clean-handed in this respect in modern days. This much may be said, that many of those who held the highest positions in our own and other lands, the noble, the cultured, the best of their times, were ardent devotees of cock-fighting. They were influenced by the spirit of the period, and, doubtless, had never thought of aught but personal pleasure. One thing may be said for the Puritans—namely, that they were nearly two hundred years in

connecting himself with cock-fighting, for every day he shall so act. The date is important in that it marks the year when the first Poultry Exhibitions, as we know them now, were inaugurated.

The literature associated with cock-fighting is abundant. That does not, however, represent its influence on national life. It was part of the life even of schoolboys. Records show that as far back as the reign of Henry II. (1152-1189) schoolmasters received a regular tax from their scholars for permitting them to fight cocks in the school-house on Shrove Tuesday. Probably from that



A FALL.

advance of their fellows, for they were strong opponents of cock-fighting. The sport entered largely into the public mind. Have we not Cockspur and Giltspur Streets, Cock Lane, &c., even yet?

Throughout the earlier years of last century the moral sense of the people, more especially that of the industrial and commercial classes, gradually rose against the sport both for its cruelty and element of gambling; and it was prohibited in 1849, as had been bull-baiting, dog-fighting, and pugilism previously. The Act of Parliament provided that a penalty of £5 might be imposed on any person keeping fighting-cocks, letting a cock-pit, or otherwise

was due the term "Cock Penny." As late as 1790 the income of the schoolmaster of Applecross, Ross-shire, in Scotland, was made up by salary, fees, and cock-fight dues, and Hugh Millar, in "My Schools and Schoolmasters," records the yearly cock-fights in the Grammar School of Cromarty about 1812. Similarly in Furness, Shrovetide fees, ranging from 2s. 6d. to £5, according to the social position of the parents, were paid to the masters for this privilege. It was a day of liberty, when the boys were supreme. A few years ago in Lincolnshire we found that on Pancake Tuesday scholars thought it their privilege to shut the master out of his own school,

until a stranger came who refused to stand any nonsense of that kind.

This is merely a sketch to indicate that cock-fighting was not all bad or even all good, and that the old fighting Game had economic qualities of a high order. Cumberland men have assured us that the true Game-hens are amongst the most prolific layers, in addition to carrying a considerable amount of flesh. Modern Game cannot claim to be either. To hear a cock-fighter talk of the latter is to hear let loose a contempt of a very emphatic nature. Three interesting items may fitly conclude these somewhat cursory observations.

native ruler with the coveted bird, got his concession, and made £10,000 out of it.

Another tale is more recent, but here the cockers scored. One day the Chief Constable of an eastern county of England received word that a party of cock-fighters were on their way from one of the northern shires to fight a big main. Arrangements were made to effect their capture, and when there landed at Newmarket Station a party of suspicious-looking individuals, whose luggage consisted of four hampers containing fowls, the police were there to watch what happened. The hampers were placed on a cab awaiting them, the men taking



DEATH.

For a long period there was a Free Tobacco-house in Drury Lane, London. The origin was said to be that George IV., when Prince Regent, had lost all his money at the cock-pit close by, and borrowing from the tobacconist, gave him the right to sell his wares without a licence.

An Indian planter who was a keen cock-fighter told us that he owned a Gamecock which defeated all-comers. The Rajah of the district wished to buy the bird, but the planter refused to sell, and thereby gave great offence. Later he sought for a new concession, which the Rajah would not give. However, the Englishman was diplomatic. He presented the

their places inside. It need hardly be said that the police followed that cab, and had a long journey for their pains, for the men drove some dozen miles, calling here and there for refreshments, but never removing the baskets. In about three hours they landed at the station again, and took the first train home. Their explanation was that they had found detectives following, and so been thwarted in their purpose. But by the arrival train had travelled a funeral party, for whom a hearse was in waiting, and the coffin brought by them was taken to one of the principal hotels in the town. The coffin contained the Gamecocks, and whilst the police were away the main was decided.

THE PRACTICAL LESSONS OF MENDELISM.

By PROFESSOR F. W. BATESON, F.R.S.

FROM various letters and articles which have appeared in fanciers' journals, it is evident that much misconception prevails as to the bearing of Mendelian discovery on the operations of practical breeders. I am, therefore, glad to accept the invitation of the Editor of the ILLUSTRATED POULTRY RECORD to point out what in the present state of knowledge Mendelism can and cannot do for the fancier. Within the limits of this article it is impossible to describe the experiments by which the principles of Mendelism have been established. For an account of them the English reader may be referred either to Mr. R. C. Punnett's "Mendelism," which gives a clear outline of the subject, or to my own text-book, "Mendel's Principles of Heredity."

First and foremost, what Mendelism does for the breeder is to provide him with a true account of the usual system of heredity, so far at least, as it is followed by most of the striking characteristics within the limits of a single species of animals or plants. It may very well be that when descent from hybrids between altogether distinct species has to be considered, some further complications will have to be reckoned with; but when the breeder is dealing with forms which, like the various races of domesticated fowls, breed together without obvious diminution in fertility, he may feel fairly confident that the descent of the leading features proceeds on Mendelian lines. He is thus presented with a true picture of the process with which he is concerned.

The essential discovery which forms the basis of the modern study of heredity is the fact that numerous characteristics are transmitted as *units*. The rose-comb of the Ham-burgh is caused by the presence in the bird of a certain something—a factor, as we call it—which gives the comb that special shape. If that factor were not in the bird, the comb would be a small single comb, like that of a Game-fowl. Similarly the pea-comb of Indian Game is due to the presence of another definite factor which pleats the comb up into the characteristic three ridges, and again, if that factor were removed from the Indian Game, its comb would also be a plain single comb, like that of an ordinary Game-fowl. The Ham-burgh's comb is thus single+a rose factor, and the Indian Game's comb is single+a pea factor. Each factor is either present or absent. So, again, in all probability, the large single comb of modern Leghorns is in reality a small

single comb+a factor for increased size. This mode of representation may, as we now know, be extended to a vast variety of features of organisation. The bird can no longer be looked on as one indivisible whole, but it must be regarded as an aggregate of divers factors.

As soon as this is realised the breeder is provided with a piece of information which must certainly prove of value. He learns the true physiological meaning of "pure-bred." First, since the different characteristics depend for their development on the presence of different factors, the purity of a bird is not a collective quality, but one which must be separately considered in respect of each of the several factors on which the characteristics of the breed depend. For example, a bird may be pure-bred in respect of its comb, though mongrel in other points. A single-combed bird, however mongrel its origin, will never breed birds with rose- or pea-combs unless those characters are brought in by breeding it with a bird possessing them. Conversely, a pair of White Rose-combed Dorkings, though perfectly pure in all the other characters of the breed, may nevertheless throw single-combed chickens if they are not pure in respect of their rose-combs. What, then, is purity of breed? In the critical sense a bird is pure in respect of any character when it is formed by the union in fertilisation of a male and female germ-cell each similarly constituted in regard to that character. When the character is due simply to the *absence* of any modifying factor there can be no mistake. Every single-combed bird is pure in single comb, because if there were present in it any factor capable of making the comb a rose or a pea, or of splitting it in two (as in the Houdan), the comb would not be single. Such characters are called "recessive." Characters which are due to the *presence* of some factor are called "dominants," in contradistinction to these recessives. Purity in the case of dominants is not so easily ascertained as in the case of recessives. The difficulty arises from the fact that the outward appearance of the bird may give no reliable indication as to whether it is pure or not in respect of a given dominant. No bird can be pure for a dominant character unless it has received the factor for that character from *both* sides of its parentage—in other words, unless it contains two "doses" of the factor. But it often happens that one "dose" causes the given characteristic to develop almost, if not quite,

as much as two doses do, and hence what looks pure and true to type may in reality be cross-bred. The only way to test for purity in such cases is to breed the individual with a recessive type. If, then, any recessive chickens appear, the dominant parent is impure, while, if some dozen chickens come, all exhibiting the dominant character, the purity of the dominant parent may safely be inferred.

The practical moral of this discovery is that the breeder should always work *from individual birds*, female as well as male, and not breed indiscriminately from several hens running with one cock, as is so often done. Purity has in its essence nothing to do with the number of generations for which a breed has been selected.

Much of the business of making new breeds consists really in compounding characters derived from two or more other breeds. In making up these new combinations a knowledge of the Mendelian factors renders the task comparatively easy and rapid. Once it is known which features are due to the presence of factors and which to the absence of factors, a breeder, by the application of Mendelian principles, can go straight to the desired result. It is true that the analysis of the features of poultry has not been carried so far as always to supply the requisite knowledge, but we already know the behaviour of a great variety of characters. How far this analysis can be carried we cannot yet foresee. There must surely be a basic "fowl" upon which the various factors are imposed. If all the factors yet identified were absent from it, such a bird when adult would have no comb, a high nostril like a Houdan, yellowish-white lobes, a yellow skin, clean, yellow shanks, no extra toe, straight, Silkie feathers white in colour, and a daw eye. It would lay white eggs, and would not go broody. It would feather slowly like many Andalusians and some Wyandottes, or, more strictly, it would hardly grow the chicken-feathers at all, but would acquire its second plumage after a period of semi-nakedness. How much more could be taken out of it, leaving it still a "fowl," we cannot surmise. An ordinary bird, such as a Black-red Game, has in it a variety of elementary factors which prevent it appearing in this forlorn condition.

It may be said that all this "knowledge" is on a plane far removed from that on which the fancier works. There is an old story of a traveller looking out of a train window and asking his neighbour how the telegraph works. "Oh," replied he, "it's like this," and taking a bit of sealing-wax from his pocket, he showed his friend that when rubbed it would pick up bits of paper. "Well, that's how it's done—

only an extension of the principle." The fancier may think Mendelism is in the sealing-wax stage, but he would be wrong. In the applied sciences there are periods of empirical and crude observation, then of constructing laboratory apparatus for demonstration, then of toys which work; next we hear of actual service in special cases where conditions are favourable, and upon this follows general use with company-promotion or Government monopoly. I should say that as an applied science Mendelism is in the stage at which it can be used for special service under favourable conditions in skilled hands. The rest will follow in due course, we may suppose.

Though, as has been already stated, a vast number of important features do depend on Mendelian factors, it should be expressly understood that many of the fine points of difference which distinguish the best from the second best birds in the same breed almost certainly are not transmitted in this definite way at all. It is, indeed, very probable that these differences are what we call "fluctuating," by which we mean that the number of causes which favour or hinder their development are so many and various that no analysis of them can be ever attempted or expected. In an established breed all that our systems can aim at is the removal of various troublesome blemishes which in some strains militate against success. Unless a feature is expressible in terms of factors, unless, that is to say, its appearance turns on the presence or absence of definite factors, the Mendelian cannot treat the case. A very important practical question of this kind arises in regard to egg-production. Everyone knows that even in good laying strains, like Leghorns or Plymouth Rocks, particular individual hens will lay many more eggs in the year than their sisters of the same breed. Can this character be fixed? To answer this question is not quite possible on present knowledge, but from several lines of experiment, especially those conducted by Dr. Raymond Pearl in Maine, U.S.A., we are getting information which will finally determine the question. To the Mendelian the problem is clearly one that admits of several possible solutions. Abundant egg-laying may or may not depend on the presence or absence of one or more factors. If there is only one factor concerned, it may produce the result only when the bird has a double dose of it, in which case a strain of birds can be bred "pure" for their high fertility. If more factors are concerned, which I suspect will prove the true account, it is not impossible, again, that a strain of extremely fertile birds can be produced. All, however, that has at present been proved by Dr. Pearl is that of the

highly prolific birds, *some only* when mated to the same cock have the power of producing highly fertile daughters. To translate this observation into its various possible Mendelian interpretations is quite beyond the present limits of space. All that can safely be asserted is that the facts show, as everyone versed in Mendelism would expect, that indiscriminate selection of birds known merely as heavy layers will accomplish almost nothing, and that in order to put the matter to a proper test, a full and minute analysis by individual breeding is necessary.

There is one point which, though well known in the Fancy, is insufficiently realised by scientific students of heredity and evolution. This is the fact that the progress of a breed proceeds by successive changes of fashion on the part of the public or of the judges, as much as by any actual physiological changes in the breed. It is such changes which a fancier is thinking of when he speaks of change of "type." For example, elegance may prevail at the expense of solidity, or a blocky type may be preferred to the more elegant. When a change of fashion of this kind sets in, as a Mendelian I should say that there is little to be expected from any special selection in a yard which does not contain the desired type. It must be bought and worked in. We know as yet very little about the descent of these subtle points of difference, but it should be

quite possible to determine the system of heredity which they follow, and the working up of a strain of the required type, once material exists, should not be difficult to a person who understands Mendelian principles. In this delicate matter of introducing new blood, it may be remarked that Mendelism is quite unfavourable to the belief that at all costs the absolutely best bird must be secured. Our advice would be to buy a moderate specimen which has the required characteristic and work out the defects.

Finally, the teaching of Mendelism, as of any other scientific system of study, is to apply a closer and closer analysis to the facts. If, for example, eggs are sterile—under good conditions of incubation—there must be a definite cause for that sterility. As Dr. Pearl has shown, a high degree of fertility, as measured by percentage of eggs which *hatch*, is transmitted by some hens and not by others. From my own observations I suspect that the factor concerned in determining this quality is the composition of the *shells*, which depends on the oviducal glands, and their constitution and mode of action are probably a matter of simple factors. Such a case may exemplify our attitude towards these more obscure problems. The breeder is taught by Mendelian principles, if not how to solve his difficulties immediately, at least how to look at them in a rational way which will eventually lead him to their solution.

THE GOSPEL OF THE NEW-LAID EGG; OR, THE GENESIS OF THE SOUTH WALES EGG AND POULTRY DEMONSTRATION TRAIN.

By EDWARD BROWN, F.L.S.

"The experiment has been an undoubted success, and Welshmen have shown that they are seriously interested and genuinely favourable to an extension of the industry and its organisation upon a sound business basis such as shall tend to equalise and distribute supplies, increase the returns to the producers, and level up the quality as well as the quantity of the produce."—*The Times*, April 18, 1910.

NEVER before have poultry and eggs occupied so large a space in the general newspaper Press and the public mind as during the last four months. First, the "Golden Egg" episode in January and February. Then was announced what one paper called an "Egg Train," which caught on by its novelty. As to its success, the extract from our leading journal given above and the hundreds of reports and pictures which have appeared throughout the country bear testimony. Many have thought that the train was the con-

sequence of the newspaper boom. That, however, is not the case, as the Demonstration Train was arranged last autumn, weeks before your daily contemporaries took up the Poultry cult. Much of the success achieved was due to the wide publicity given by them to the expedition, for they roused the interest of the whole community. It would be impossible to acknowledge adequately the magnificent support accorded by all sections of the Press, several representatives of which accompanied us on the journey.

My present purpose is to give some account of the scheme, its inception, methods, and, as far as may be, results, not alone as a record, but because of the opportunities which this method of propagandism and instruction affords.

For the idea we cannot claim originality on this side the Atlantic. To enterprising American educationists the credit must be given. Four years ago, when in the States, I was interested to learn that the Maine Agricultural College was running a train of this kind. The idea got hold of my mind. It appealed very strongly by reason of its novelty, its wide-reaching opportunities, and its eminent practicality. The determination was made to follow suit. The way was not easy. Unfortunately, our Agricultural Colleges have not the means, and apparently lack the desire, to adopt new methods of this character. So it had to remain an unrealised object. Probably the time was not ripe. The psychological moment had not arrived. April, 1910, was that moment, as we can now see. A multitude of events have contributed to the result achieved. Possibly a year ago would have been too soon. Further, at this time my hands were free for the work of organisation.

Why South Wales? had often been asked. That was due to a fortunate coincidence. In July of last year, as Poultry Expert to the Agricultural Organisation Society, I paid a visit to that part of the country. The need for some means of awakening farmers and others to missed opportunities was evident on all sides. With one or two exceptions practical poultry-keeping was seen to be in a backward state, showing less evidence of progression than in almost any part of Great Britain south of the Grampians, and yet with soil and climate in every sense favourable. The cause was not far to seek. There was no encouragement to increased production, due to the low prices prevailing, in themselves a result of antiquated and thoroughly bad methods of marketing. The whole countryside was in the hands of hucksters who ruled the roost, did what they liked, and paid what they thought fit. Producers had no alternative outlets, and must accept, willingly or unwillingly, whatever was offered. It was evident that some scheme must be devised to rouse them from their lethargy—ordinary methods would not fulfil the purpose. Interviews with local Committees and others had no effect. Then and thus the Demonstration Train tour was designed.

To think of a scheme is only a beginning. It has to be made an actuality. The Railway Company had to be considered, for its co-operation was a supreme factor. Fortunately,

the idea was favourably entertained, and difficulties disappeared with desire to carry out the scheme. I was able to convince some of the leading officials of the Great Western Railway Company that it was not only possible, but worth a trial, and when once that stage was reached, so far as they were concerned, the rest naturally followed. We cannot too warmly recognise the hearty co-operation of the Great Western Railway Company's officials and their readiness to afford every help to smooth our path. One and all threw themselves into it with earnestness and even enthusiasm. Sympathetic assistance before and during the tour was rendered, and the provision for our comfort during the eight days spent on the train was luxurious. A matter of business to the Great Western Railway Company, they made our way easy. And the same may be said for the servants at every stage of the journey.

But what about finance? For such an expedition is costly. As soon as the Committees of the two Societies with which I am connected—namely, that already named and the National Poultry Organisation Society—had the plan submitted to them, sanction was given. That was in November last. It commended itself at once. There were, so far as I am aware, no doubts, no reservations. But no one ventured to think that results would be so great as have proved to be the case. The season was late, my work in Belgium had been arranged, and then came the political crisis, so that postponement to the spring was necessary. Time was thus given for the many preparations to be made, as to the centres to be visited, the working of the ground in advance, the fixing of meeting-places, and the equipment of the car. The weeks which elapsed between the first announcement of the tour and the departure from Paddington marked a steady growth of interest, due to multitudinous notices in the Press.

In the report presented to the respective Societies concerned, mention is made of the loyal help and co-operation of those who shared in the work, but, in addition to the G.W.R. officials, I desire to mention that the local arrangements in Wales were made throughout by Mr. Walter Williams, Organiser in the Principality to the A.O.S., and for the fitting up of the Demonstration Car Mr. Verney Carter, Organising Secretary to the N.P.O.S., was responsible. Mr. Carter had charge of the demonstrations, and was favoured with the help of Mr. David Thomas, who worked indefatigably—as, in fact, did all concerned. Mr. Williams and Mr. Thomas are both Welsh-speaking. That meant much, not only directly, but in many ways, as they com-

manded a confidence which the Englishmen alone could not at first expect. It was eight days of hard but pleasant labour. All worked enthusiastically. Even railwaymen and Pressmen helped. Each one seemed to be aware that he was taking part in a movement which may profoundly influence agriculture and agriculturists in the future, and which was being tried for the first time in the Old World. The send-off at Paddington raised high the hopes and stimulated the endeavours of all, but from the first stop in Wales onwards there was no doubt of the result. Crowds everywhere, not merely curious, but really earnest. In some cases we wanted not one car but half a dozen, not two demonstrators but a score. People came from miles away. They desired to learn. Sceptics were there also, but the majority went away convinced. The combination of verbal instruction, discussion as to details, and practical demonstration swept away opposition, if there were any. During the eight days between three and four thousand people visited the Demonstration Car, and more than four thousand were present at the meetings. In all nearly twenty-five thousand leaflets were distributed.

The car placed at our disposal by the Great Western Railway Company was one of the large luggage vans, in three compartments, with brake and guard's room in the centre, and corridor ends. This division was not so convenient as could be wished, for in the majority of cases visitors had to enter and leave by the central door, causing congestion. I hope that in any future expedition either a special car will be built, or one selected with brake at the end, so that those coming to see it may pass right through. One compartment was given up to appliances illustrating production, inclusive of models of houses, incubators, brooders, bone-cutter, cramming machine, marking rings, and netting. In another were cases of English and foreign eggs, to indicate market requirements, and what home producers have to meet in competition, together with the class of egg-boxes recommended. In no case was the object to discriminate between individual firms. We had relays of Sussex fowls as a standard of finish and quality, and these awakened great interest. The compartments were decorated by maps and large drawings of various breeds of poultry. At the suggestion of the G.W.R. representative, the luggage compartment of the saloon was darkened so that egg-testing could be shown. Nothing proved of greater interest or had a higher educational value. Had the space been four times as great, that would not have proved equal to the demand. Multitudes went away, realising for the

first time what a good lamp will reveal as to the conditions of eggs as seen through the shell.

The programme followed at each centre was that as soon as the vehicles were shunted into a siding the Demonstration Car was thrown open to visitors, and the attendants commenced their labours, often continuing to the last moment before leaving. Two to six hours were spent in this way. At a stated time a meeting was held either in a convenient building or in the station yard. At some of these open-air gatherings cramming demonstrations were given. Except whilst the meeting was being held, the experts were in the saloon, giving information and discussing various points with inquirers. Usually a conference was held with the Committee of the local Co-operative Society, at which many details were explained and questions answered. These conferences were of the greatest importance, and were much appreciated.

It is impossible to say what the complete results will ultimately be. Probably these may never be measurable. That a great development of the poultry industry will follow is certain. Farmers and their wives have had their outlook widened. The hen has assumed a place denied to her before in the rural economy of South Wales. Production will be stimulated. That, happily, is not all. One thing the mission has taught—namely, that there are eggs *and* eggs. The gospel of the new-laid egg has been brought home to the South Welsh. A week- or ten-days-old egg is not what the market requires, and its value is 20 to 25 per cent. below that of the two- and three-days-old product. The importance of selection has been emphasised. Great results will follow in due course, provided the marketing is standardised to modern requirements, which can best be accomplished by co-operative marketing on the best lines. The appearances are that immediately eight or ten Collecting Centres will be established, the success of which will be repeated in many districts which we were unable to visit. The two Societies responsible for this tour intend to follow up what has already been done, and to take advantage of the opportunity thus created.

The influence of this new departure is much wider than South Wales. From all parts of the country demand has come for a similar service. We have proved its value. To stop would be folly. That is true in respect to eggs and poultry. There is, however, no monopoly in the application. In other branches of agriculture the same scheme may be adopted, and already we have heard that proposals are being made in that direction.

FIFTEEN YEARS' EXPERIENCE OF POULTRY-KEEPING IN YORKSHIRE.

By F. W. PARTON.

IN all parts of the country poultry-keeping has developed enormously during the last few years, but perhaps in no county is the increase so marked as in Yorkshire. Fifteen years ago poultry did not occupy anything like the same important position in agriculture that it does to-day. It has now become an industry, the importance of which is admitted, perhaps somewhat reluctantly, by farmers who at one time regarded poultry-keeping as quite beneath their notice; the fowls were merely "there" and were left to the care of anyone. The importance of good housing received small attention, and as to shelter, it was absolutely neglected. The amount of maize consumed was simply appalling, and the number of eggs, in proportion to the number of fowls, was so disappointing that the farmer's contempt for his "scavengers" was not surprising. But at last he was led to see that with attention, and proper management, the commercial possibilities were not to be scorned, and consequently an improvement in the quality of the stock and better methods of management became very pronounced. Poultry is rapidly gaining the recognised position on the farm that it so richly deserves. We have always had those who have specialised in one or the other branch of poultry-keeping, whether as fanciers, giving all their attention to exhibition points, or as utilitarians, devoting their energy to obtaining an increased egg-yield or early table-chickens; at the same time, fifteen years ago, on most general farms, the fowls were of a very nondescript character, and had no distinct type. The heavy breeds, however, did predominate, hence the number of eggs was small as compared with the output of to-day. The breeds have now assumed an entirely different character, and the non-sitting races are mostly in evidence. Improvement has been achieved in the majority of cases by the annual introduction of new males that were considered most likely to secure improvement in the desired direction. Improvement has been very apparent so far as egg-production is concerned, but the same cannot be claimed for table-poultry, as very little, if any, general improvement is found in the quality. Large birds are certainly produced, but they are distinctly coarse; and, despite all endeavour at instruction and advocacy of fattening, no at-

tempt has been made to prepare market chickens, by penning up or any other method that would enhance the value, except by a few individuals who have specially laid themselves out to meet this trade. This neglect of table-fowls is doubtless due to the fact that to meet the great and ever-increasing demand for eggs—which in Yorkshire is enormous—the breeds best suited for this purpose have been chiefly kept and the table qualities have been sacrificed.

During the last fifteen years great improvement is apparent in every direction. Feeding is on better lines; the stack-yard is no longer their permanent hunting ground; cockerels are not allowed to remain, as formerly was the case, until the following year's chickens make their appearance. In many parts of the North and East Ridings the prices of eggs are very poor indeed, and they do not realise anything like what might be obtained were a better system of collection and marketing adopted. The Yorkshire farmer has learned to regard poultry as undoubtedly the most important of all the minor branches of agriculture, and now gives an amount of attention to their management never thought of a few years ago. At the same time, with all his willingness to adopt new ideas and up-to-date methods, he is exceedingly slow in one great and vital point—he does not, or perhaps it would be more correct to say he *will not*, see the necessity of combining with his fellows in a way that would lead to an organised system of marketing. In some of the outlying and more remote parts of the North Riding, and on the wolds of the East, the old custom of exchanging eggs for groceries and other commodities supplied in the village still exists, and in other parts the village carrier is the medium between producer and consumer. There would, of course, be no objection to the latter method were the carrier to buy the eggs from the producer and market them to the best advantage for himself. But, instead of this, he is merely paid a small amount for conveyance, with instructions to return the eggs if prices are not thought good enough. This is a most unsatisfactory system, and to a very large extent neutralises progress in other directions.

There has been an enormous increase in the number of poultry-keepers in suburbs and in our large and thickly-populated towns of the

West Riding, and round such towns as Halifax it is an astounding sight to see the conditions under which fowls are kept and the painstaking ingenuity that has been displayed in adapting the available space to their requirements. It is regarded as a hobby by some artisans and as an additional source of income by others; but from whatever standpoint the pursuit is taken up, attention is paid to most of the small details that go far to make or mar success.

The consumption of eggs in the West Riding of Yorkshire is very great, and it is estimated that of the £8,156,000 paid to foreign countries last year, Yorkshire's share amounted to no less a sum than £2,000,000. It is very doubtful whether £2,000,000 worth of eggs and poultry are produced in the three Ridings; so, great as has been the growth of poultry-keepers during the last few years, there is room for still greater development. The facilities for keeping poultry in the West Riding are far from ideal, and land is most difficult to get; cases are to be found where the working-man is actually paying one penny per square yard every year for a piece of land on which to house his poultry; and I have it

on the authority of these men themselves that, despite the fact that their land costs them at the rate of £20 per acre per annum, they can still show a profit which is a considerable help to their income. At the time of year when eggs are most plentiful the price in the West Riding rarely goes beyond twelve or thirteen for a shilling, and, as the demand is practically unlimited, the return is excellent. In many cases where allotments were formerly utilised for gardening, poultry-keeping has been taken up. Non-sitting breeds, notably White Leghorns and Anconas, appear to be the favourites, although practically every breed from the Silkie to the Brahma is to be found. The number of small fanciers has also increased considerably, and in quite a lot of districts poultry societies have been formed with their annual local shows; so not only do we find the economic side developing, but also the exhibition. It is a noteworthy feature to see the improvement in quality of the stock in districts where a poultry society exists. The same may be said of districts in which a well-known fancier resides; other and lesser lights in the poultry world follow his example in the keeping of pure stock, and thus his influence is for good.

WHO'S WHO IN THE POULTRY WORLD.

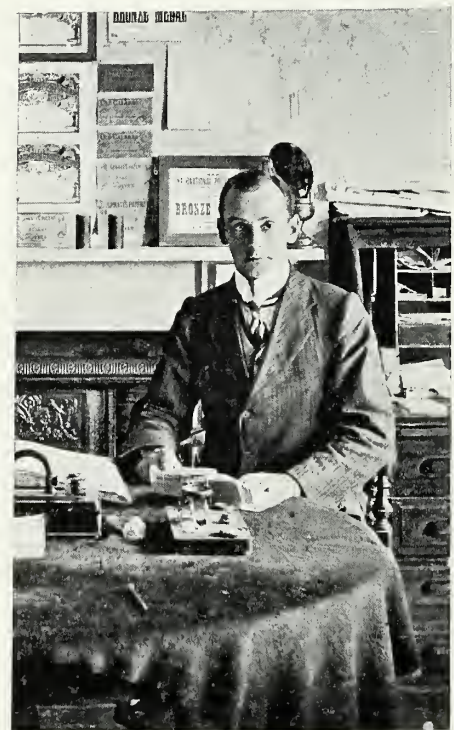
MR. A. A. FLEMING.

MR. A. A. FLEMING, who is a director of Finch and Fleming, Ltd., the well-known appliance company, is also a practical breeder of poultry, and has taken an active part in the development of the Fancy. Originally in the wholesale tea trade, he was compelled to give this up for reasons of health; and, as so many others have done, entered the poultry industry partly from the same considerations. He began by becoming a pupil of Mr. and Mrs. John Wilkinson, and after two years went into partnership with this successful pair.

With the help of one or two other fanciers, he started the Buff Plymouth Rock Club in 1904, and was elected hon. sec. and treasurer. A few months later he took over the same duties for the Plymouth Rock Club; and he has retained his official position in both these flourishing specialist clubs to the present day. On the occasion of his marriage, each club presented him with a purse of gold and an illuminated address. His experience as a judge has been extensive. In addition to being the club judge of the two above-mentioned clubs, he is also judge of the Buff Orpington Club. He has judged at the Crystal Palace, Norwich, Hayward's Heath, Kendal, and at a host of minor shows.

In 1906 he entered the firm of R. A. Colt, Ltd., afterwards known as the Poultry Outfit Company, which concern he managed in conjunction with Mr. B. Finch. Two years later Mr. Finch and he bought out the old company, and started as Finch and Fleming. Our readers may be reminded that

a poultry-farm is run in conjunction with this appliance business, and that this allows the latter's products to be tested by practical use.



MR. A. A. FLEMING.

REV. E. LEWIS JONES.

THE Rev. E. Lewis Jones took up poultry as a hobby in the year 1904. Up to that time he had led a busy life as headmaster of a Secondary



REV. E. LEWIS JONES.

School and afterwards as a curate in a mining district. In September, 1903, he settled in the country at Cwmbach House, near Bulth Road. As he had a small orchard he thought that he would keep some poultry, and invested in a pen of Campines. He knew practically nothing about poultry, and first of all went over a poultry-farm and examined the birds there, and Campines was his selection. Having settled on his breed, he started with one good pen of birds and exhibited that same year, winning first prize on his initial venture. He has since then exhibited steadily with a great measure of success, and has won every prize of note that is open to Campines.

Mr. Lewis Jones is a late Open Natural Science scholar of Jesus College, Cambridge, and his scientific training has been of inestimable value to him as a breeder. He is an ardent believer in Mendelism, and has carried out some experiments on Mendelian lines. He has written a little on scientific breeding in various journals, English and foreign.

He is hon. sec. of the South Wales branch of the Poultry Club and delegate to the Poultry Club Council, hon. sec. to the Campine Club since 1905, member of the Committee of the Black Wyandotte Club, and a member of the Blue Wyandotte Club and of the N.P.O.S.

The management of his farm and the whole of the breeding is carried out by Mrs. E. Lewis Jones, B.A., who is an equally enthusiastic and keen fancier. Mrs. Lewis Jones is now perfecting the

Gold Campines, which she thinks will be a most taking breed when once the markings are got properly.

M. LOUIS JACOT.

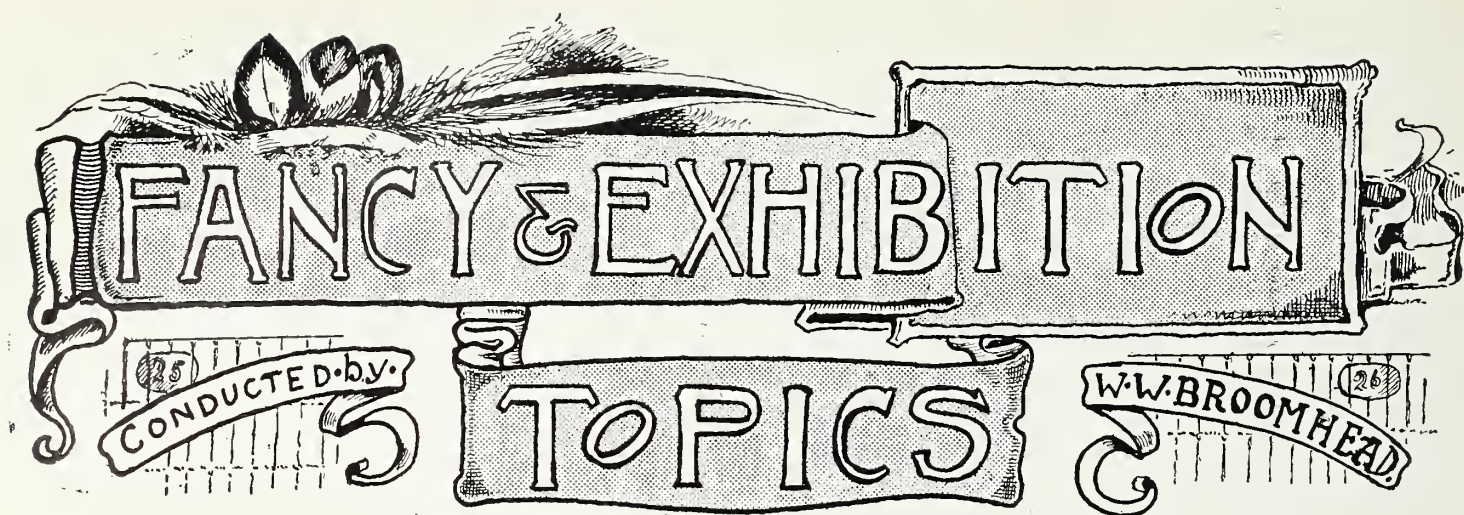
OUR French correspondent M. Louis Jacot has many qualifications for his position. First and foremost he is deeply interested in the development of the poultry industry in France, in which he is taking a practical share; secondly, he lived for five years in England, and knows our methods; and thirdly, he married an English lady. Thus he is an example of the *entente cordiale* in which we all rejoice.

Coming to England in 1900, M. Jacot immediately began to study our methods of poultry culture, ultimately establishing a small poultry-farm at Ascot, Berks, where he bred Orpingtons, White Leghorns, Plymouth Rocks, and Aylesbury ducks for utility purposes. Afterwards he removed to Preston, in Kent, where his attention was devoted chiefly to the production of table-chickens. In 1905 business recalled him to France, where he became interested in a large and well-known firm of incubator manufacturers. He also organised special poultry plants for proprietors in different parts of France, and has recently started one of his own in the Department de l'Yonne.

When living at Ascot, M. Jacot was a frequent visitor to Sir Walter Palmer's poultry-farm, Winkfield, which was in the charge of Mr. G. E. Parham. In 1904 he translated into French Sir Walter Palmer's well-known book, "Poultry Management on a Farm," which, published by the Librairie Larousse, of Paris, has been a great success.



M. LOUIS JACOT.



A Question of Classification.

Now that the show season has once more opened—we have just entered the 1910-11 exhibition year, although the last has scarcely closed—it will serve a good purpose if I draw attention to one or two little items regarding the classification of certain breeds, which not only is apt to puzzle the “raw recruit” but often causes annoyance to the “old hand.” I refer to the classification of such breeds as Sebright Bantams, Indian Game, Black Sumatra Game, Croad Langshans, and Rosecombed Barred Plymouth Rocks, for instance. In which classes should these birds compete if separate ones are not provided for them? It is so common to find them first in one class and then in another that it is not surprising the young beginner is liable to be somewhat bewildered on the point. Let us look into the question, and take the breeds as I have mentioned them.

The Bantams.

What are Rosecomb Bantams? This question has often exercised the minds of fanciers in certain parts of the country. At many shows held in the North of England, and at exhibitions throughout Scotland, where classes are provided for Rosecomb Bantams, it is generally the custom to schedule them as “Rosecomb, Black, or White.” At one time this led me to believe, like many another fancier in the South, that the classification was so specified to discourage any attempt to add to the two existing varieties of the Rosecomb Bantam, since on one or two occasions, very rare, certainly, there have been exhibited typical Rosecombed Bantams of other colours than black and white. I have seen a Mottled and a Black-Red in cocks, and a Spangled in hens. However, I was wrong in my supposition, and it was not until I had made a tour of some of the northern shows, six or seven years ago, that I discovered my error.

Are Sebrights Rosecombs?

The fact is, at the shows in question, if Rosecomb Bantams are classified without any specification regarding colour, it may be said to be the rule rather than the exception to allow Sebright Bantams to compete under that head. When I first saw this I made an attempt to discuss the point with the judge. As a matter of fact, I wanted to know definitely why this particular judge had given a

conflicting decision. At least so it appeared to me, since he had acknowledged Sebrights in the classes for Rosecombs and also in the “Any Other Variety” Bantam classes! I asked him why he had awarded prizes in the former instance, and he informed me that since Sebrights have the rose type of comb they are quite eligible to compete in the Rosecomb class. It is unquestionable, of course, that the Sebright is a Rosecombed Bantam, in so far as it is adorned with a comb of the rose stamp. Nevertheless, it is an entirely distinct race from that which has for years been known as the Rosecomb, and, moreover, the two have separate standards of perfection. However, at the show in question I tackled a well-known Bantam breeder on the subject, and his opinion was that it was quite right to allow Sebrights to compete in classes for Rosecombs, but in such circumstances they were not correct in the “Any Other Variety” classes. Now, with all due deference to that great authority, I fail to see the reason for such a decision as the former. And for these reasons.

No!

When Rosecombed Bantams were first brought out—considerably over half a century ago—and for some years subsequently, I believe that it was customary to refer to them as Black Bantams or White Bantams, according to their colour. However, when the keeping and exhibiting of Bantams became a more popular hobby, and other breeds had their Black and White varieties, the word Rosecomb was added. The Sebright Bantam had been nearly always called the Sebright, although it has been referred to sometimes as the Laced Bantam, and also as the Sir John Sebright Fowl; but never in its whole history has it been classed in works on the subject as a Rosecomb. For these reasons it appears strange to me that there should have been any question about the proper classification of the Sebright, and I cannot understand how it ever came about that judges encouraged the mistake. Personally, I would not countenance the exhibiting of Sebrights in classes set aside specially for Rosecombs, and I consider that it is the duty of all judges to pass birds so-penned. Why should the Sebright be so favoured? Admittedly it is a most charming breed; but other kinds of Bantams quite as popular as, if not more so than, it have often to compete in the “Any Other Variety” classes. Moreover, as I have said, the

stamp of the two breeds is different. The Rosecomb is a diminutive Hamburg, the cock's tail is well adorned with flowing sickles, while the hen's is carried closely; but the Sebright cock is hen-feathered, and in both sexes the tail is well spread or shaped somewhat like a fan.

Game and Other Fowls.

So much, then, for Bantams. Turning to large fowls, one of the commonest errors made is in the classification of Indian Game. It has long since been decreed by the Indian Game Club that, so far as the exhibiting of the breed is concerned, it shall not compete as Game, the word Game standing for Modern or Old English Game, and for no other. And yet how often one sees Indian Game winning or being recognised in Game classes, and by competent judges! Concerning it the Poultry Club has a special show rule, No. 5, which is as follows: "Classification of Indian Game, Black Sumatra Game, and Yokohama (Japanese Long-tailed Game) Fowls.—Where no classes are provided for Indian Game, Black Sumatra Game, or Yokohama (Japanese Long-Tailed Game) Fowls, they shall only be qualified to compete in the Any Other Variety Distinct class or classes, and are not eligible to compete in 'Game—any variety,' or 'Game—any other variety' classes." Then take Croad Langshans. Are they Langshans, or, rather, are they eligible to compete in a class for "Langshans"? Some say they are not, and yet the Poultry Club's breed cup for Langshans is for any variety of Langshans, and it certainly includes the Croad. Finally, are Rosecombed Barred Plymouth Rocks eligible for the Plymouth Rock classes? If not, why not? And where will the newest Rock of all, the Golden Barred, compete? These things should be decided "once and for all." But who shall do so? In my opinion the proper authority for such matters is the Poultry Club; but to carry them into effect requires the co-operation of the poultry judges.

THE WHITE POLISH BANTAM.

THAT there is utility in Bantams goes without saying, and those people who have kept them for their eggs and meat—and there are many who do so, even in this country—find them quite profitable birds. It must be admitted, however, that most breeders of Bantams are fanciers first and foremost, breeding the "wee yuns" for their fancy or exhibition points and killing only their "culls" for the table. For fancy, then, they must be considered, until some poultry-keeper in this country goes in for Bantams on a wholesale scale, such as was mentioned in last month's RECORD. Of the numerous breeds of the miniatures none is more beautiful than the Polish in the several varieties. One of the most ardent fanciers of this breed of Bantams was Mr. S. Cadman, of Roche Abbey, who has so recently passed from among us. For many years he, with the late Mr. W. F. Entwisle, made a special study of the breed, of which every variety was produced in the miniature.

One of the chief points of the Polish Bantam is the development of the crest, and, needless to say, that point is one of the most difficult to get in perfection. Colour and size are also of importance,

and in the former it must not be overlooked that the legs should be blue. This fact is mentioned here since it does not appear to be known to all fanciers, and on more than one occasion White Polish Bantams with white legs have been awarded premier honours at important shows in the "any other variety" classes. The breed is not very largely kept in this country at present, but with the increased interest that has been taken in Bantams of recent times the Polish may come into favour once more. Perhaps the most famous stud of the breed kept at present in this country is that at Calder Grove, owned by Mr. Fred Entwisle, whose Bantam establishment is well worth a visit.



WHITE POLISH BANTAM COCK.

Bred by and the property of Mr. J. F. Entwisle. 1st Crystal Palace, 1st Dairy, 2nd Manchester, 1909.

Size—or, rather, weight—is always an important consideration in an exhibition Bantam. The weights for Polish Bantams, given in the recently-published Poultry Club's Standards, are as follows: Cock, 17oz. to 22oz.; hen, 14oz. to 18oz. From the amount of feather with which the adults are furnished, they invariably appear heavier than they actually weigh. Many people imagine that the chickens are difficult to rear; but such is not the case—it is a question of exercising common sense in the management of them. The most troublesome period of their lives is when their crests are half-grown. They then require special attention, so that the feathers may be well formed and not get any check.

A STEWARD'S EXPERIENCES AT A BIG SHOW.

By WILFRID H. G. EWART.

WE are now on the threshold of what is commonly known as the summer show season, and as this is a period of excitement and anxiety for most fanciers, one may appropriately discuss that factor of great importance, the show steward.

No great time ago I undertook his onerous duties at a well-known fixture, and from what I saw there (as also at other shows last year) I formed the impression that he, of all the various officials, is the man of prime importance to the exhibition. The judge and the secretary loom large in every schedule and every advertisement, but the steward very seldom appears in either. Of course, when you have a number of local gentlemen officiating, the publication of their names would not convey a great deal. Incidentally, however, it is my idea that the name and address of the chief steward should be published invariably in schedule or advertisement; and, further, that any complaint in respect of penning or treatment of exhibits at the show should be referred to this person instead of to the overworked secretary.

Mistakes will occur at every exhibition of live stock, and mistakes did occur at the one just mentioned. In occasional cases they were due to the negligence of exhibitors, but as a rule stewards were at fault. This was assuredly excusable, inasmuch as something like 1,500 exhibits were staged. The secretary knew nothing about the blunders or their consequences—the chief steward was expected to deal with them. Consequently when someone wrote to the secretary about some error in penning or dispatch, the matter had to be referred to the other official, and became exceedingly complicated.

At this particular show we had a tolerable band of stewards, and, with all due modesty, I can say that the work was done pretty well. The work of a show steward, mind you, is no sinecure, and the office is by no means one to be coveted. One must needs be "on hand" about 7 p.m. on the previous evening and—well, the task that lies ahead is arduous, to put it mildly. The pens are all ready, staged and littered, but then in the neighbouring annexe is the ever-increasing mountain of hampers. To that every steward has to turn his attention, and as the railway company's vans roll up, replenishing this mountain with the greatest regularity, he discovers it is a case of toiling on and on into the small hours of the morning. He toils on and on, and the pens fill up, and how very tired he becomes! It is a weary job he thinks; the show altogether a tedious affair. He waxes careless then, and the mistakes occur inevitably and naturally. It is too much trouble to check off the hampers as their contents are distributed, and too much trouble to make absolutely certain that the contents *have* been distributed. So the harm is done.

Now, this penning is by far the most important business of the show, and my experience is that one careless penner can do an extraordinary amount of harm. I can put aside my own shortcomings for the moment and discuss critically those of my fellow-stewards. One of these had a very serious habit of placing a bird in a pen and omitting to shut it down; catastrophes were narrowly averted, and finally it

became a perpetual necessity to follow the gentleman along and inspect his work. Another—a most excellent, enthusiastic person—possessed an elementary notion of how to handle a show bird; he would bundle it into its pen in a rapid and robust manner, and, as a consequence, the quality of his work was quite incomparable to the quantity. There were, of course, the very typical fanciers who would *talk* at a great rate, to everybody's utter distraction. All of them contributed to the worries of the chief steward, who was luckily, however, a very efficient man.

Now, how splendidly one could have done without these delightful people! They worked, it is true. But wouldn't their labour have been much better expended in another department of the show? It is often difficult to secure enough stewards, but even admitting that, let them, above all things, be carefully selected. Choose men who can (to demonstration) handle exhibition fowls in a knowledgeable manner, choose reliable men, and men who do not converse a very great deal. Select your chief steward with the utmost care. See that he organises and supervises his assistants, and, most particularly, insist upon the checking of hampers in detail as they come to be unpacked. This is the duty of the secretary.

But then arrives the day of the show, and a great deal of work remains to be done. There are hampers yet to be unpacked, and a certain crowd of very forcible gentlemen clamouring to enter at the side-door. Keep them out! Don't allow them to touch their Rocks or Wyandottes—it is against the rules of the Poultry Club. Presently the judges come along, and the good steward spends the morning travelling to and fro with slips for the secretary's office. Or perhaps he is engaged packing away the hampers and getting things into shape prior to the admittance of the public. Before now I have come across birds palpably suffering from diphtheric roup, or some other ailment almost equally serious, and such should be immediately placed in their baskets and dispatched home at the earliest opportunity. Cards, too, are waiting to be put up, and, in fact, at good shows they are always ticketed on the pens immediately each class is judged.

When the public is admitted the steward must be on hand, wearing his badge of office, ready and willing to oblige anybody, and take as many inquiries off the shoulders of the secretary as possible. He must be efficient without being officious, and when the time comes to break up the show and dispatch the exhibits, he must not consider himself an overworked man. Energy is every whit as necessary then as it was at the outset—in fact, rather more so. The local exhibitors and many others also will doubtless be desirous of removing their several properties personally, and it is the steward's duty to inspect their removal tickets, countersign them, and deliver them up in a businesslike way. He must not run away and leave to his fellows the arduous packing work, because that, in the language of public schools, amounts to "shirking." He must toil again far into the small hours, and depart only when his services really can be spared.

The foregoing, therefore, constitutes the duties of a steward at a big show—at least, those are his duties as my experience interprets them. I find I have written precepts instead of experiences, as a matter of fact, but they are all the same so far as this point is concerned—that the show steward is a

very important part of the show. Especially at these summer fixtures his lot is no mild one, and the injured exhibitor must not too readily blame him. He probably does his best, and if his best is bad—well, he never ought to have taken on the job.

THE ANDALUSIAN FOWL.

OF the several non-sitting breeds of poultry which are at present cultivated in this country, the Andalusian is among the oldest. As can be imagined from its name, it originated in Spain; and in its earliest days it was frequently referred to as the Blue Spanish Fowl. That it more nearly



A TYPICAL ANDALUSIAN PULLET.

resembles the old White-Faced Black Spanish in general outline than it does other varieties of the Mediterranean group, is patent to anyone who is in the least familiar with the two breeds. The Andalusian is trimly built, and somewhat after the Game type, while its legs are rather longer and more slender than those of other fowls of the non-sitting class. For some years, until, in fact, the recent "boom" in Blues, it was the most popular breed of its colour. Some fanciers think that it was the only Blue variety of fancy fowls; but that is not so, since there were the Blue Game and the Blue Langshan, to mention only two. It is also thought that most of the new Blues owe their origin in a large degree to the Andalusian. It may be so; but at least one successful strain of the present day contains the blood of the Blue Madras Game.

It is said that when the Andalusian was first exhibited, it was practically a self-coloured Blue of a soft dove-colour. If that is so, there is hope for those fanciers of Blue Wyandottes whose fowls are now of that tint! It must not be forgotten, however, that the Andalusian is really a Black and Blue fowl, blue ground colour and black markings. In the Poultry Club's Standards of Perfection the plumage is described as follows: "Ground colour clear silver-blue, with distinct black lacing on each feather, except that the cock's hackles, back, wing bows, sickles, and tail coverts are black or purple black, with a rich gloss, while the hen's neck hackle is rich lustrous black, showing broad lacing on the tips of the feathers at the base." There can be no doubt that the breed, like nearly all other exhibition fowls at some time of their existence, has been out-crossed, and in this instance the Minorca has been "blended" with it to increase its size and heighten the colour of its lacing. However, the out-cross has not had the effect that such an infusion would have on some other varieties, and the general characteristics of the Andalusian are to-day similar to those of the earliest importations.

Considered as a utility fowl, the Andalusian must be classed solely as a layer; and at any age it cannot be said that it figures as a table-fowl. As a rule the pullets and hens are very prolific egg-producers; and the eggs, although white-shelled, are of good size, and command a ready sale. They are hardy fowls, and the chickens are quick growers if reared in a common-sense manner. And, despite what some authorities may say to the contrary, they feather well if they have the right kind of food.

MEN AND MATTERS.

By W. W. BROOMHEAD.

The Combined Show Again—The Poultry Club and Judges—Black Orpingtons—Another New Variety—The Royal Counties' Show—June Shows.

THE COMBINED SHOW AGAIN.

I hear that I have been slightly misinformed with regard to the Combined Specialist Clubs' Show, which I mentioned in last month's notes. The chosen town is Sheffield, but the dates are Wednesday and Thursday, December 7 and 8. Full particulars of the general terms upon which the show will be held are to hand; but since they are of a lengthy nature, it is not possible to include them in these notes. I may mention that, without any special appeal, a sum of upwards of £150 has already been guaranteed by a few prominent fanciers, and the committee of the venture is making a general appeal to all fanciers interested in the scheme to increase the guarantee fund in order to place the show on a thoroughly sound financial footing. It need hardly be pointed out that the event is being worked entirely in the interests of specialist clubs, and that generous support now tendered by fanciers will be the means of ensuring a successful issue to the scheme and ultimate benefit to all clubs participating. Full particulars can be obtained of the hon. secretary, Mr. W. M. Bell, St. Leonard's, Ringwood, Hants. Mr. Golding has

resigned the joint secretaryship. The distance between his residence, near Sevenoaks, Kent, and Mr. Bell's, at Ringwood, Hants, is so great that the plan has been found unworkable, and it is solely on that account that the secretarial reins are now entirely in the hands of Mr. Bell. Well, I wish him luck! If ever there was a scheme in which one man will have his hands full, it is in the "running" of such a show as the Combined Specialist Clubs' event promises to be.

THE POULTRY CLUB AND JUDGES.

An extraordinary general meeting of the Poultry Club was held on May 7 at Birmingham, to discuss the advisability of altering that part of Show Rule No. 3 referring to judges being members of the club. It will be recollected by those readers of the RECORD who are at all interested in the work of the Poultry Club that at the general meeting of the club held at the Dairy Show last year it was decided that in future none other than members of the club should be allowed to officiate as judges of poultry at shows held under Poultry Club Rules. This measure was carried by 31 votes to 11. And generally it was considered that the club had at last done something to show its strength. Northern members as a whole were particularly pleased at the decision, and it was felt that it would do a power of good in the Fancy. Then someone who found that the new rule would not be to his advantage began to "kick." Others took up the cry; they said it was a most coercive measure, and one calculated to ruin the club, or words to that effect. As a result the Council decided to call the meeting to which I have referred. At that meeting there were not 30 members present, so it cannot be said to have been representative by any means. However, to cut a long story short, it was decided, after much discussion, and by 12 votes to 9, that the words "The Council of the Poultry Club to have the option of objecting to any person nominated to judge" be substituted for "And any judge appointed to officiate in that capacity at this show must be a member of the Poultry Club." It was pointed out that both the Lancashire and Yorkshire branches had sent up resolutions strongly in favour of the rule standing as it was passed at the Dairy Show, while the representative of the Devon branch, who attended, said that his committee had deputed him to vote against any alteration or amendment. What the Fancy, and the majority of the members of the Poultry Club in particular, will think of this latest "weakness"—since, in my opinion it is nothing else—remains to be seen. The Poultry Club has made one or two big mistakes in its time, and this latest decision will be one more to add to that list. If the rule had been given a fair run and had been found unworkable, well and good. But to condemn it before trial is a somewhat weak proceeding. How the amendment is going to work will be interesting to watch. Any judge "objected" to by the Council will surely want to have reasons, and if it does not lead to libel it will surprise me.

BLACK ORPINGTONS.

Is the Black Orpington going downhill? I have heard so many complaints against the variety of late that I am inclined to think that unless something is done to give it a fillip this coming season, it will not loom so large in the public eye as it has done.

The chief complaint is that it is not now a good layer, and that the exhibiting of it to the "extreme" type of the past two or three years has almost ruined it for the breeding-pen—at least, for the production of early chickens. I have been visiting some yards of late where the Black is kept, and the birds mated are from the best strains in the country. But without exception I have been told the same tale—the Black, for early chickens, gets worse each year! My own experience this season has certainly tended to bear out that statement. My first difficulty was to get eggs and my second to get fertile eggs. I was breeding from last year's pullets, and I had the birds in the autumn. But feed them as I would, never an egg did they lay until spring had arrived! And of the first batch I put down all but two were infertile. Succeeding batches were almost as bad, and the number of chickens of the variety so far on hand is not encouraging. Other breeders with whom I have communicated on the subject have not had much better results—in some cases they have not had as good. Chancing to meet Mr. Bell quite recently, I asked



EXAMPLES OF WYANDOTTE HEADS. [Copyright.]
The bird on the left has a neat comb, keen eye, and wattles of correct size; the other head is coarse, its leader sticks up, while the wattles are too heavy.

him how he had fared with them, and he told me that his Blacks had never done better. The old hens came into lay in December, and generally they have beaten the pullets, while this season he has had more early Black chickens than ever! It will be interesting to see how the Black Orpington chickens turn up at the early shows this year. I also heard from Mr. Bell that at his new farm at Winchester he has between 13,000 and 14,000 chickens of this season's hatching, and all Black, Buff, and White Orpingtons.

ANOTHER NEW VARIETY.

I hear on good authority that one of the latest varieties to be exhibited at the shows this season

will be the Golden Barred Plymouth Rock. This is not of home "manufacture"—it hails from the United States of America. But since it is in good hands it is likely to boom well in the near future. It will have its send-off from two Lancashire yards, and Mrs. Wilkinson, of Scotforth, Lancaster, and the Bolton Model Poultry Farm, of Lostock, have taken it up. The new variety will have golden bars in place of the black bars of the original Plymouth Rock, while the ground colour will be white. It is evident, therefore, that it promises to be a most charming fowl for show; and since very glowing accounts of its utility properties have come over with it, there should be a demand for the new variety among those poultry-keepers who want something useful as well as ornamental. Whether any of the existing Plymouth Rock Clubs will take the new variety under their wings, or whether it will have to start out with a club all to itself, remains to be seen; but since one of them at least fosters other varieties than the original Barred, and the new branch is a single-combed one, I see no grounds for objection.

THE ROYAL COUNTIES' SHOW.

Those readers of the POULTRY RECORD who missed the Bath and West Show at Rochester and Chatham last month, and are anxious to visit one of the early exhibitions this season, should note that the Royal Counties' fixture takes place on the 7th, 8th, 9th, and 10th inst., while the "Royal" opens at Liverpool on the 21st inst. Both events are well worth a visit, if for no other reason than to see how the 1910 chickens have progressed! The former show will be held in the historic city of Winchester, and the poultry section promises to be an important feature as usual, although the fact that it is the jubilee meeting of the Society may mean that it will be a record turn-out. I hope so. The arrangements generally will be under the able stewardship of Mr. William Wing, and the judging will be in the hands of Mr. John Wilkinson and Mr. Fred J. S. Chatterton.

JUNE SHOWS.

June promises to be a very busy month for poultry shows. Opening with the Wiltshire Agriculture at Warminster on the 1st and 2nd and the Northampton County at Daventry on the 2nd and 3rd, there will be no fewer than five county events in the second week. These are the Huntingdonshire, at St. Neots, on the 7th; the Herefordshire and Worcestershire, at Worcester, on the 7th, 8th, and 9th; the Royal Counties, at Winchester, from the 7th to the 10th; and both the Essex Agriculture, at Witham, and the Royal Cornwall, at St. Ives, on the 8th and 9th. During the following week there will be the Shropshire and West Midland Agricultural Society's Show, at Shrewsbury, on the 16th and 17th, while the "Royal" will take place at Liverpool from the 21st to the 25th. In Ireland the June poultry shows include Portadown, on the 2nd; Omagh, on the 8th; Strabane, on the 9th; Antrim, on the 10th; Dungannon, also Banbridge, on the 14th; Ballymena, on the 15th; Newtownards, on the 16th; Limerick, on the 21st; Newry, on the 22nd; Kilkenny, on the 23rd; Clonakilty, on the 27th; and Mallow, on the 28th. Among the exhibitions already announced for July are Derby, 13th and 14th; Bolton, 16th; and the "Highland," at Dumfries, from the 19th to the 22nd.

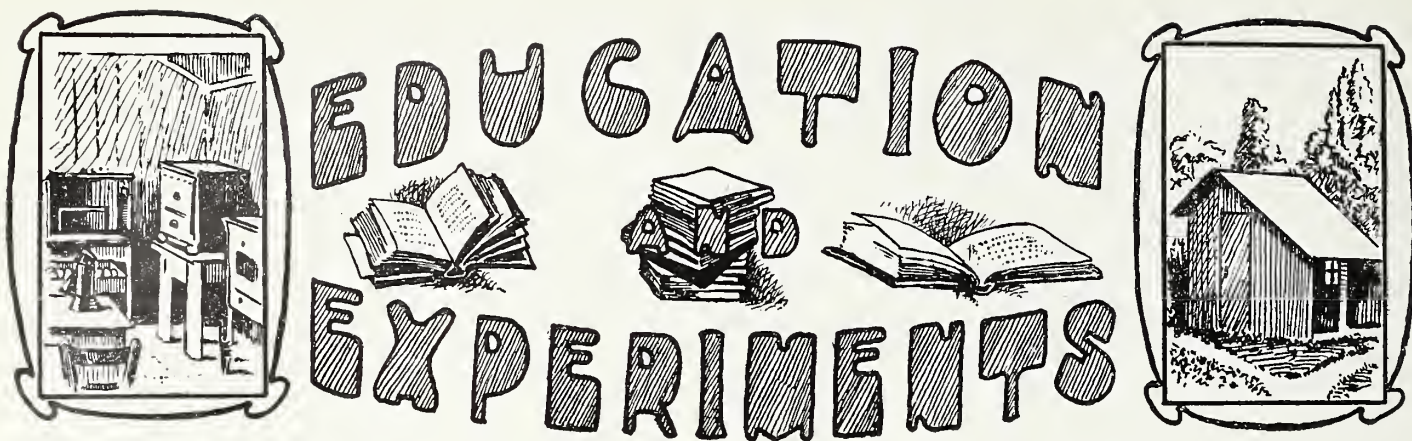
FEEDING POULTRY AT MINOR SHOWS.

To the Editor of the ILLUSTRATED POULTRY RECORD.

SIR,—The conditions under which poultry must necessarily be exhibited, penned in small cages, call for the special attention of the superintendents of the feeding arrangements. The same foods that fowls have been accustomed to in their roomy pens and yards at home will not agree with them at all in the close confinement and consequent inactivity of the show-room. The health and appearance of the birds are materially affected by the food they eat, and if that is not of the proper kind and fed in the proper manner, birds that have come to the show in perfect health may look drooping and spiritless towards the evening of the first day, and may be in positive ill-health before the close of a show extending over several days. Whole grain should never be fed to birds confined in show-pens, nor should they get whole grain before starting for the show or for home after the show. It is better to let them have soft food before starting and fast when that has been assimilated, than whole corn, which they cannot digest in close confinement. While the show is in progress the birds should be fed with soft food in a crumbly mass, and should be watered twice daily. Specially prepared foods for the feeding of poultry while staged at shows are now much used, and some of these can be recommended in preference to anything in the nature of a soft food that can be made up. The use of such foods ensures health, and relieves the attendants of much worry and responsibility. When fowls arrive at the show, food should be given sparingly, as they are apt to indulge in an over-feed and to drink too much water, if allowed to do so, and this would spoil their chances in close competition. Birds while at a show are in a constant state of excitement, kept up by change of scene and the eager curiosity of spectators, who give them no rest, and this excitement tends to lessen their powers of assimilation. It frequently happens that the man in charge of feeding the exhibits is not a poultry-keeper, and consequently knows nothing about his work. He will not observe that a bird is ill until it is very nearly dead, and then nothing can be done to save it. This want of proper care of exhibits is one reason why shows are not better supported, and an all-sufficient reason, too, because poultry-keepers cannot afford to run the risk of losing their best stock in this way. Poultry-keepers who make a special business of showing, sending their choice specimens to one show after another throughout the season, are fully alive to the necessity of keeping their birds in condition by constant attention and suitable foods, and in order to do this they send an attendant with the fowls to every show. All this, of course, is very expensive, but exhibitors find that they must bear the expense, as it pays them better than leaving their exhibits to the tender mercies of the show committees of minor shows. The appointment of an intelligent poultry-keeper to attend to and feed the birds at shows would reduce the expense of exhibiting, secure greater support for small shows, and confer a kindness upon the poor imprisoned birds.—Yours, &c.,

H. DE COURCEY.

Johnstown, Co. Kilkenny.



POULTRY INSTRUCTIONS IN NATAL.

THE Natal School of Agriculture and Forestry at Cedera, a School run under the Department of Agriculture, has just issued the curriculum adopted for the various classes. The staff is a very strong one, and the art of agriculture should be helped very greatly by the dissemination of knowledge possessed by the lecturers and instructors. We are glad to note that the industry of poultry husbandry is included in the syllabus. Poultry-keepers in South Africa have many difficulties to overcome that are undreamed of by their *confrères* in this country, and, therefore, all that can be done to gather information with reference to special conditions, and to the individual necessities of the South African poultry-keeper, will be a step in the right direction to place the industry upon a sound basis. It is impossible to over-estimate the great influence that the Agricultural Colleges have on the rural prosperity of a country.

THE SOUTH DAKOTA STATE SCHOOL OF AGRICULTURE.

IN the making of the Mid-West, South Dakota is beginning to take a part in some degree commensurate with her great agricultural possibilities. In the development of her vast resources the most important factors are, and will continue to be, her young men and women, and the growth of the State must depend very largely upon the training of the young in the special direction of the work before them.

The South Dakota School, including as it does classes for the preparation of both men and women for the life and work on farms and in the homes, will undoubtedly play an important part in the future well-being of the State.

The curriculum embraces a large number of subjects, not only along normal lines, but in technical directions as well. Apart from such subjects as English, mathematics, history and civics, music and penmanship for all, the men are specially taught agronomy, poultry-keeping, soil origin and formation, land management, animal and dairy husbandry, machine work, horticulture, forestry, and veterinary science, and the women are instructed in home economics, cooking, sewing, household bacteriology,

laundrying and all branches of household management, together with dairying, horticulture, and poultry-keeping.

The course is of three years' duration, each session covering a period of the five winter months. The remainder of the year is spent by the students at home, putting into practice such work as they have learnt. To teach the underlying principles of the objects and operations of the farm and household, and their application in successful practice, is the aim of the instructors.

It is specially interesting from our point of view to see the important part that poultry husbandry is playing in all of the States, as they are one by one incorporating this subject in their syllabus. It is equally true of this country, as with America, that poultry-keeping is bound before long to be looked upon by all as a profitable branch of agriculture.

THE DEVELOPMENT OF THE POULTRY INDUSTRY IN SCOTLAND.

ONLY twelve months have elapsed since the Report and Recommendations of the Departmental Committee of Poultry-Breeding in Scotland was published, and already decisive steps have been taken to carry out some of the schemes proposed and recommended by that Committee. Since we published the text of the Recommendations in full, in the June, 1909, issue of the ILLUSTRATED POULTRY RECORD, it is unnecessary for us to refer in detail to the suggestions that were embodied therein, for the reason that all that is being done to-day is in accordance with the ideas of the members of the Murray Committee, and, therefore, in dealing with the work that is now being carried on by the various public bodies and organisations we shall have occasion to deal with the various points.

In the early days of the industry of utility poultry-keeping in England it was found that the first necessity lay in the direction of education, and the same necessity arose a few years later in the case of Ireland. One has only to consider the very great advancement that has been brought about in England and Ireland during recent years, to realise that the pioneers of the industry were correct in their assumption that the most important factor towards success was contained in the one word "education." Seeing that only twelve months have

passed since the deliberations of the Committee were made public, and knowing that colleges and public organisations work slowly, as yet no direct results have been achieved in the way of increased egg-production in the various parts of Scotland. A firm foundation, however, has been made by those most interested in the subject, and it is now only a matter of time before the schemes that are being forwarded result in a practical and profitable development of the poultry industry.

It must not be considered that in the past no attention has been paid to the subject of poultry-keeping, since for some years past education work has been carried on in different parts of the country. But, owing, perhaps, to the fact that those in authority were only in a state of semi-conversion themselves as to the profitableness of this industry, what little work was done was done spasmodically and ineffectively. The one outstanding exception

the Scottish Agricultural Organisation Society, Ltd.

We propose to consider briefly the schemes that have been formulated by these various bodies for the education of those living in the rural districts, who make their livelihood from the cultivation of the land. It must be stated, generally speaking, that the whole of Scotland, including the Islands and the Highlands, forms one vast area every part of which is suitable for the carrying on of successful utility poultry-keeping in one form or another. There are only three large centres of population in the whole country, the remainder of the towns being small, and, to a certain extent, dependent on the prosperity of the surrounding agricultural land. The value of the demand for eggs and poultry in Scotland is in the neighbourhood of £3,000,000 per annum, and it is estimated by those who are in close touch with the markets that nearly £2,000,000 worth of poultry produce has to be imported every year



MAIN BUILDINGS AT POULTRY SCHOOL, KILMARNOCK.

to this is the case of the West of Scotland Agricultural College. The Department of Poultry Husbandry at Holmes Farm, Kilmarnock, has for the past few years accomplished much, when it is realised how limited were their opportunities. It will be remembered that special stress was laid by the Murray Committee on the value of the instruction given at this centre and the desirability of increasing the staff and enlarging the equipment, so that the department might be in a position to provide advanced instruction and to carry out experiment and research work.

The development of this industry is in the hands of four public bodies—namely, the West of Scotland Agricultural College, Glasgow; the North of Scotland Agricultural College, Aberdeen; the East of Scotland Agricultural College, Edinburgh; and

to make good the insufficiency in supply. The opportunities are so great, and the local conditions so suitable, that not only should Scotland be able to supply her own needs, but there should be a surplus remaining for exportation to those large centres of industry situated in the North of England. We believe that this can be accomplished, and when done, it will be to the advantage of the producer and the consumer alike. It is well known that the supplies of the best quality foreign eggs are decreasing very rapidly, and, therefore, unless a concerted effort is made by the agriculturists in the country, the enormous difference between supply and demand will be still further increased.

The whole of Scotland is practically divided between the three Agricultural Colleges, from an educational point of view; the Scottish Agricultural

Organisation Society concerning itself with the important question of marketing. Whether this division will remain as it is in the future it is somewhat difficult to say, since the Scotch Educational Department—the department that is responsible for all forms of education in Scotland—appears to take a very broad view of the term “education,” and it is possible that the colleges themselves may in the future devote part of their activities to this question of marketing.

The West of England Agricultural College, Glasgow.

The West of Scotland Agricultural College has recently appointed a poultry expert as director of that department of poultry husbandry. Their object in making this appointment is to have someone with an intimate knowledge of the subject as supervisor of both the internal and the external work in this subject. The poultry-farm at Kilmarnock is being considerably enlarged, not only with a view to make it an up-to-date centre for teaching the practice and theory of poultry-keeping, but with the object of making it suitable for the carrying out of tests and experiments in various directions. The courses of instruction have been extended and several new features are being introduced.

In the future there are to be two courses of ten weeks each, one in the autumn and one in the spring, and a School Teachers' course in the summer vacation. A special syllabus of lectures has been arranged for the last-mentioned course, and only those subjects will be taught that can be incorporated in the school Nature Study class. It is thought that by this means the older children will be given a scientific interest in the management of poultry.

It is also proposed to hold occasional Farmers' Institute days at the Farm. Special railway facilities will be given, a few leading outsiders connected with the industry will be invited to lecture, and demonstrations will be given. External instruction is to form a part of the new director's work; visitations will be made to districts within the college area, advice will be given to all those interested, upon their own farms, and in the winter lectures will be provided.

In all probability a Missionary Egg Train will be run through some of the south-western counties, similar to that which toured through South Wales in April last under the auspices of the N.P.O.S. and the A.O.S.

Full advantage will be taken of the benefit of disseminating knowledge by means of leaflets, and it is proposed to publish and distribute a monthly bulletin dealing with the special work to be conducted during the month. This will be sent free to all those known to be interested in the industry.

The North of Scotland Agricultural College, Aberdeen.

As yet the Aberdeen College has no Poultry Establishment at which practical instruction can be given; therefore, the work of this department is confined to the holding of external lectures and classes. The area served by this College comprises the whole of the North of Scotland, the Islands of Orkney and Shetland and the Western Islands, and the increasing demand for instruction in this subject and the popularity of the classes has necessitated

the extension of the College staff in this direction. At the present time there are six instructresses, and one has been engaged temporarily for duty in Skye. The Governors have also had two Gaelic-speaking young Crofters undergoing a course of instruction at the Central Classes of the College in Aberdeen and at the School of Poultry Husbandry at Kilmarnock. These men have been specially trained to work in the congested districts. The teachers are engaged for about six and a half months a year giving poultry instruction, and three and a half months dairy work. Their duties are as follow:

1. To give a short course of instruction and conduct classes in poultry work in their respective districts. This includes practical classes where regular pupils take part in the work.

2. To give special lectures as a preparation for longer courses, or by request of local societies.

3. To give simple lectures with lantern slides, &c., in connection with Continuation Classes and also in Day Schools to Supplementary Classes where school teachers are agreeable.

4. To give demonstrations in poultry work at agricultural shows and public and private meetings, with a view to stimulating an interest in the work generally. It may be mentioned that at the Alness Crofter Show last summer demonstrations were given at intervals by two of the College instructresses during the day, and were regarded as a feature of the show.

5. To visit farms and crofts in districts where instruction is being given with a view (a) to enabling instructresses to become thoroughly acquainted with local conditions as regards poultry matters generally; and (b) to giving instruction and hints privately on improved methods of management. (In the crofting districts in particular this method of instruction is being largely resorted to.)

6. To advise on poultry matters generally, to answer inquiries by letter, to examine and report cases of disease, &c., and to visit farms and crofts for this purpose.

During the past year 171 meetings for instruction in poultry work were held with a total attendance of 7,742. In addition nearly 900 special visits were made by the staff to farms and crofts in the furtherance of this work.

Quite recently a proposal has been made by one of the Governors (Mr. Cuthbert, Factor for Mr. Dyson Perrins, of Ardrross) to hand over a suitable croft in the neighbourhood of Alness for the purpose of establishing a centre at which poultry management could be taught to the wives and daughters of crofters in a course covering several weeks, such a method of instruction being regarded as essential to the development of profitable poultry-keeping in the crofting districts. Mr. Dyson's offer has been accepted.

It is estimated that the expenditure for the current year will be about £1,000, and considering the number of teachers in full employment, this sum appears to be very reasonable.

It will be seen from the foregoing brief summary of the work carried on by the College that the Governors are at present carrying out to a very large extent the recommendations contained in the Report of the Departmental Committee on Poultry-Breeding in Scotland.

As we reported in our issue for April, this College has been enabled to carry on a very interesting and instructive experiment in this subject,

thanks to the gift of £250, of Mr. James Murray, of Aberdeen.

The report of that experiment was given in brief in the issue previously referred to.

The Scottish Agricultural Organisation, Society, Limited.

The Society was formed in order to develop the organisation of agriculture in Scotland through co-operative purchase of the materials and manufacture and sale of the products of agriculture, and through similar undertakings in which advantages may be obtained for farmers by combined efforts. In other countries very great benefits have resulted to agriculture from the combined and organised efforts of those engaged in it; and British farmers, especially those whose holdings are small, are placed at a disadvantage, even in British markets, by the superior organisation of their foreign competitors.

Leaflets dealing with various aspects of agricultural organisation have been prepared, and many thousands of them have been distributed during the year. A list of these is appended. Other leaflets are in course of preparation.

1. Formation of Egg and Poultry Societies.
2. Breeds of Poultry as suited to position and soil.
3. Winter Egg-Production.
4. Hatching and Rearing.
5. Suggestions for Members of Collecting Depots.
6. The Marketing of Eggs and Poultry.

The organisation of the poultry industry continues to make progress both in the formation of new societies and in the extension of the work of those already existing. The Executive Committee have co-operated with the Highland and Agricultural Society in the expenditure of that Society's grant of £50 towards the improvement of poultry in the Highlands. They are glad to report that this expenditure promises to yield excellent results and that the improvement of marketing organisation and the improvement of poultry-breeding are processes mutually helpful to one another. Very substantial increases in the price of eggs have resulted from the Society's work in Orkney, in Lochaber, and in other districts. Whenever the produce, such as milk or its manufactured products, eggs, and certain products of the fishing industry, such as crabs, lobsters, &c., have been collectively put on the market, higher prices have been obtained, with the effect of stimulating local traders also to offer increased prices for such produce. Unfortunately there are too many farmers who are content to take advantage of the benefits which the co-operative movement has conferred, without doing anything themselves to strengthen or help the work of organisation.

A resolution was approved of by the Executive Committee, and a series of meetings was arranged in 1909 by the secretary of the branch. These were addressed by Mr. Prain, the Poultry Expert of the S.A.O.S., who gave lectures at the following centres: Strathpeffer, Alness, Kildary, Avoch, Evanton, Bonar Bridge, Golspie, Brora, Helmsdale, Aldourie, Invergarry, Glenmoriston, Drumnadrochit, Tomatin, Stromeferry, Kyle of Lochalash, Balmacara, Glenelg, Applecross, Torridon, Gairloch, Kinlochewe, and Achnasheen. All these lectures were fairly well attended. As a result of these meetings,

Agricultural Co-operative Societies were formed at Banavie, Invergarry, Arisaig, Braeroy, and Aldourie. These Societies have been duly registered under the Provident and Industrial Societies' Act. Every one of these Societies has so far proved most successful. They have all found improved markets for their eggs, the rise in price being very considerable in each of the districts.

A committee has been formed to make recommendations to the executive as to the disposal of the Highland and Agricultural Society's grant towards improving the poultry breeds in the Highlands. This committee recommended that the grant be applied this year in purchasing settings of eggs, and that these should be sold by the different organised societies to the crofters at a price not less than 1s. and not exceeding 2s. per dozen, each Society to have the option of purchasing the cockerels hatched from these eggs at a price not exceeding 5s. per dozen. These recommendations were adopted, and the settings of eggs were selected by the secretary of the S.A.O.S., and distributed by the different Societies accordingly. Full advantage was taken of the generous offer by the Highland and Agricultural Society, and practically the whole grant was disposed of. From all accounts the hatchings from these eggs have proved satisfactory.

In connection with this scheme 258 settings of eggs from pure-bred fowls have been distributed amongst small holders who are members of District Affiliated Societies.

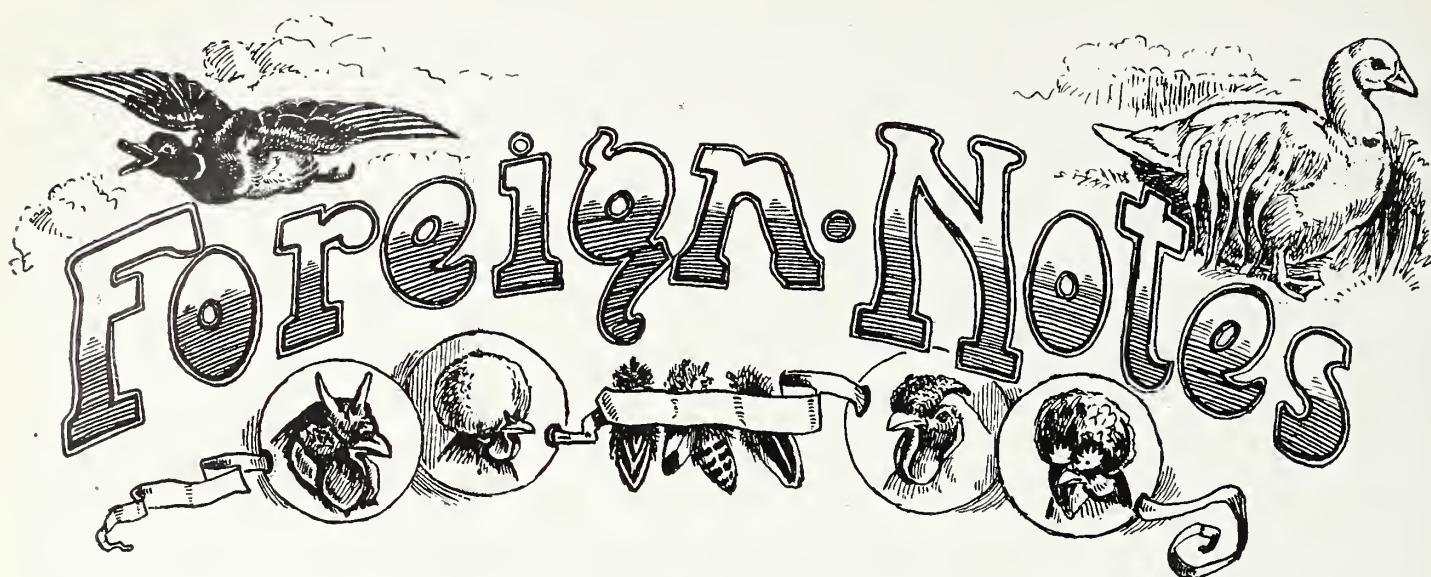
As showing the effect in rural districts, the following quotation from the secretary of the Harray Society is given: "The poultry industry is making great headway. A very keen interest is being taken in the matter by our members. Wooden houses are now being set up in the fields all over the district. Improved housing, breeding, and feeding have resulted from the lectures delivered and the literature distributed in this county. The eggs which our Society is able to send out are improving in quality and quantity. We are selling 400 dozen per week, our present price being 9s. per long hundred."

From the brief summary here given it will be seen that the agricultural colleges and the S.A.O.S. are now fully alive to the importance of the industry of poultry husbandry as a great national asset, and that they are at last doing something to further this branch of agriculture.

The East of Scotland Agricultural College, Edinburgh.

At the present time this College is doing less than either of the others before-mentioned to further the industry, but we understand that developments are now in hand, and that these will be completed in the near future. During the past year short courses of instruction with practical demonstration were given at fifteen centres in the College area, and longer courses, also with practical demonstrations, were given at twenty-two centres. An evening class was held in Edinburgh during the winter, and was attended by upwards of sixty students. At present there is no poultry station attached to the College for demonstration purposes, but it is expected to have such a station carried on in connection with a College Farm as soon as it can be established.

Poultry lectures are included in the course of lectures on farm live stock and also in connection with the Dairy courses held within the College area.



Yolk Colour.

Pale or dark yolks in eggs are objectionable. What consumers like are those having reddish-yellow yolks. *L'Indicateur Avicole* says:

The yellow colour of an egg yolk is due to the presence of sulphate of iron, which it contains in an extremely small quantity.

An egg is also more nutritious and wholesome when the yolk is well coloured, and we know that fowls living at liberty and of which the natural food is abundant, produce eggs with well coloured yolks. These eggs have an agreeable flavour, that which all particularly desire.

On the other hand, fowls confined in small runs and deprived of grass lay eggs with pale yolks, to remedy which there should be an abundant supply of green food, and an addition to the drinking water twice per week of a small quantity of sulphate of iron, which will ensure eggs with well coloured and more nutritious yolks.

Cold Storage Eggs.

Some time ago statements were made in this country, evidently inspired by cold storage companies, to the effect that eggs kept at a low temperature were superior to the ordinary forms of preserved eggs. A lecturer, if we remember rightly, at Edinburgh University claimed that the latter were hardly worth looking at. The evidence which comes to us from America, where the cold-storage system has taken a firm hold, is certainly not satisfactory. A strong prejudice has arisen against them by reason of their unreliable quality. A large amount of money has been lost by speculators. Up to the present time water and water glass have found no serious competitor. A suggestion has been made for the compulsory branding or stamping of all cold-stored eggs in the States.

M. Leopold Sas.

This well-known poultry-breeder, whose courtesies many visitors to Malines have experienced, has been awarded the Belgian Agricultural decoration of the first class. M. Sas is one of the original members of the Royal Belgian Poultry Society, and has been an ardent supporter of the

Malines fowl, as well as other varieties. He well deserves this distinction.

Brussels Exhibition.

An international Exhibition of Poultry is announced to be held at Brussels on June 4 to 6, in connection with the Universal Exhibition now being held in that city, but, so far as we are aware, no attempt has been made to make it representative.

Value of Early Maturity.

Mr. James B. Moorman brings forward in the *Reliable Poultry Journal* a question which is not new, though presented in a fresh aspect—namely, the accumulative influence of early maturity in pullets so far as egg-production is concerned. His experiment was with Plymouth Rocks, which, as a rule, commence laying at seven to eight months old. In 1907 he hatched early pullets, the first of which began operations when just over six months old. In 1908, breeding from the earliest layers of the previous year, the first eggs appeared in five months and eighteen days. Again breeding from the earliest layers of the previous season, the result was five months and four days. And, as is usual, the earliest layers were the most prolific. How far this can be continued remains to be tested. But probably sooner or later breeding from pullets every year will weaken the stock, though minimised by early hatching. It is, however, a question which deserves the attention of breeders.

Production of Eggs.

Our contemporary *Jardins et Basses-Cours* estimates the egg-production of six countries as follows:

United States	...	...	...	862,540 tons
France	...	...	...	300,000 ..
Germany	...	...	...	270,000 ..
Great Britain	...	...	...	125,000 ..
Denmark	...	...	...	56,000 ..
Belgium	...	...	...	30,000 ..

Russia is not included, but it is stated that 51,000 tons of eggs are exported annually to Great Britain. In 1906 the Halles Centrales of Paris sold 247 millions of French eggs and 81 millions of foreign—about 18,000 tons.

Belgian Exports and Imports.

In 1909 Belgium imported 73,154,384 eggs more than she exported, but exported 566,536 kilos more dead poultry than was imported, so that the balance of trade is on the export side.

Poultry Prosperity.

Mr. Millar Purvis, of Peotone, Ill., U.S.A., editor of the *American Poultry*, believes in the future of the poultry industry, and has recently said:

It seems very improbable that we shall ever see the time again when poultry and eggs may not be produced at a profit that will make it worth while to keep as many fowls as possible and give them the best possible care. Indeed, the better the care the larger the profits until the limit of production is reached, and very few are ready to set a place where production will end.

It is my firm opinion that those who enter the poultry business soon, taking up one of the most popular of the pure breeds, will have occasion to congratulate himself that he took the step, for the poultry business is entering a period of prosperity such as it never before has experienced.

Our chief danger arises not from over-production but from over-intensification.

Prices of Eggs.

In this country the prices of eggs vary greatly, but that is between home and foreign, as many of the latter come long distances. In New York City the range in the first week of February last was from 30 cents (1s. 3d.) to 70 cents (2s. 11d.) per dozen and all of home production.

Another Variety of Leghorns.

It is announced that a Belgian breeder has produced a White Leghorn with crest, which should not be difficult to do. It is said to be a *race pratique et décorative*.

Eggs for Hatching.

The *Standard* (U.S.A.) says: "Dip eggs before you place them in the incubator or under the hen in a solution of a teaspoonful of creolin to two quarts of water. Heat the water so as it feels warm to the hand (105 deg.). Allow the eggs to remain in the solution for twenty seconds. This will kill mould spores. It is advisable to wash out the egg chamber of your incubator with the same solution."

Model Incubator Company.

Mr. R. H. Essex, who has been for some years connected with the Cyphers Incubator Co., of Buffalo, N.Y., has secured a controlling interest in the Model Incubator Co. of that city, and now takes the position of president and manager. It may be noted that Mr. Essex is English born.

Swiss Neglect of Poultry.

That poultry occupy a very minor place in Swiss agriculture is evident to all who visit the country. Why is difficult to understand, as the consumption of eggs and chickens is enormous. France and Italy are the great sources of supply. The Swiss Peasants' Union have published figures showing that of the incomes of farmers only 0.7 per cent. is derived from poultry-keeping, which means that out of every hundred shillings less than ninepence come from the hens.

RHODE ISLAND COLONY FARMS.

A CORRESPONDENT has asked for information as to the colony system of poultry-keeping as carried out in the State of Rhode Island for many years. Brief reference was made to this in an article entitled "Poultry on American Farms," by Mr. John H. Robinson, which appeared in our issue of November, 1908 (Vol. I., No. 2, page 75), but we reproduce the following from the "Report on the Poultry Industry in America," published by the National Poultry Organisation Society.—EDITOR *I.P.R.*

One of the most instructive and interesting periods of my tour was that spent in the Tiverton and Little Compton district of Rhode Island, for there was seen in operation a system of poultry-farming which has for many years proved most successful, in that it is conducted upon rational lines, and appears to be suitable for adoption elsewhere. Respecting it very little is known even in America. I was fortunate in having as guide Mr. J. H. Robinson, Editor of *Farm Poultry*, of Boston, Mass., who has within the last five years frequently visited the section and called attention in his paper to the system adopted. The district is part of a tongue of land lying between the Sakonnet River on the West and an arm of the sea on the East, the sea rounding it off to the South. Thus it is surrounded by water on three sides, from which we have the explanation of the comparatively mild winters and the small snowfall which are experienced. Within a few miles is Newport, the famous seaside resort of wealthy Americans. The land consists of a fairly good soil, but is almost bare of trees, is wind swept, and the stone fences dividing the fields—a rarity in America—show that at one time it must have been well covered with stone. Starting at Tiverton, a few miles below Fall River, Mass., we drove a distance of more than twenty-five miles, and I have never seen even in Sussex or France so many poultry-houses or fowls upon the same area. For America it is a unique spectacle. Within half a dozen miles of Little Compton in every direction there are scores of farms where poultry are kept and raised in large numbers, hundreds of poultry-houses can be seen from the roadway in the course of a mile or two, and it is estimated that half a million hens are kept within that radius. This is the district where has been evolved the race known as the Rhode Island Red, and nearly all the fowls are more or less that breed. The methods adopted and the houses used are wonderfully uniform, almost monotonous. But these afford an example of what can be done in practical poultry-keeping over a long period of time, for the section has been strong in poultry for sixty years, though the increased production has been most marked within the last two decades. The main idea is egg-production, as the Rhode Island Reds produce good sized eggs, deeply tinted in shell, and are in large demand upon the Boston and Massachusetts markets. The Reds do not, however, appear to be heavy layers, yet they yield a satisfactory profit to their owners. Large quantities of geese are also bred in the district. The people are shrewd, quiet, somewhat reserved, but essentially practical, and differ greatly from those found in the manufacturing towns a few miles away. The farms are usually from sixty to one hundred acres in extent, consisting of both pasture and arable land. The former is used for feeding stock or is cropped for hay, and the latter is cultivated for grain. In

many cases the fields are small, reminding us of certain districts of England.

It is desirable to remember that whilst the number of fowls kept upon these Rhode Island farms is large, and to some extent the methods adopted are intensive, the poultry section is but part of the farming operations—an important, even a leading part. Almost entirely the poultry-houses are small, and there is an entire absence of the large structures seen upon the big poultry plants previously described. The colony system was first introduced about sixty years ago, and extensions have been entirely along these lines. So far have the original methods been retained that very few incubators are used, and only upon one place I visited is a brooder-house employed. Hatching and rearing is almost universally natural, not artificial. This is possible from the fact that early hatching

are devoted to rearing and others to ordinary cultivation. For instance, Mr. Fred Almy, of Little Compton, who has been engaged in this work for fourteen years and has made a good living and more at it, so much so that, in reply to a question, he indicated he is satisfied and prosperous, owns 120 acres of land, and keeps 1,800 laying hens, so that 45 acres are used for the laying stock. He showed me one field which has been occupied by the layers for twelve years, and there is no sign of taint, but it is fed with stock or cropped annually. This bears out what we have found in England—namely, that the danger point is when we get beyond forty fowls per acre. The farm of Mr. W. N. Sissons, at Little Compton, consists of 65 acres, and he keeps 1,500 layers. These are fair examples of many others. Mr. Almy assured me that it was most important to change the rear-



Photo by]

RHODE ISLAND COLONY HOUSES

[J. H. Robinson.

is not attempted, because there is no need to bring out chicks other than at the regular season, generally in April. The Rhode Island Red is an excellent sitter and mother. I was informed that when broody hens are required they are always available. The houses are generally 8ft. by 12ft. and 6ft. high, with gabled roofs, are provided with large windows in front, a 3oin. door, and the usual trap entrance for the hens. Inside they are fitted with perches and nests, and as they have no floor the earth is thickly covered with sea sand. In the majority of cases cattle are kept on the same fields as the fowls, and, where that is so, it is customary to put a rail fence around the houses to keep the stock away from the water vessels and food-troughs. Each house is designed to hold thirty-five to forty fowls, and the customary plan is to allow one such house to the acre. But the whole farm is not thus occupied by poultry, for portions

ing ground for chickens every year, but under the method named such change is not needed for adults. This season he has raised nearly 3,000 chickens, and reared 1,000 on a field not exceeding two and a half acres. The point which I wish to emphasise is that this district proves the practicability of poultry-keeping by farmers upon a much larger scale than has hitherto been attempted in England, as part of the general work of the farm, and that it has proved successful for a long series of years in a large number of cases. But due care has to be paid to avoidance of overstocking and prevention of tainted soil. The profit acknowledged by some of the breeders is 1 dol. (4s. 2d.) per hen per annum, which is satisfactory, considering that the Rhode Island Reds do not lay more than 100 eggs in the twelve months. The cost of feeding is much less than on the larger plants, . . . for the hens obtain a large amount of natural food, and

as much as possible is grown on the spot. It is possible at 80 cents (3s. 4d.) per head per annum. The returns would be greater if more prolific fowls were kept, but if non-sitters or late sitters were employed provision would be necessary in the shape of incubators and brooders, with a corresponding increase in the capital required and the cost of management and labour. It is also to be remembered that foxes are unknown in that section, and other enemies have been exterminated.

MODAVE AND ITS POULTRY.

LIÈGE is the centre of a district where poultry-breeding is universally popular, whether for exhibition, for profit, or for sport. The great annual show, promoted by the energetic L'Union Avicole de Liège, has exerted vast influence. An account of the profitable, or utility, side is given in

had the opportunity of visiting that section of Belgium can form the faintest idea of its beauties. It differs as much from Flanders as does Cumberland or North Wales from the Essex flats. The Château is situated on a lofty rock overlooking the deep, winding ravine, at the bottom of which flows the Hoyoux River. Its history goes well back into past centuries, and is full of interest, whilst its spacious rooms and courts give the ideal of grandeur not often met with. The lines are large in every sense. It is the home of a great proprietor, maintained on a princely scale. In the group photograph which accompanies these notes, taken at Modave, are M. Ivan Braconier, M. Maurice Laloux, a vice-President of the Society named before, himself a breeder of M. norcas, M. Jules Lamarche, a well-known fancier of Wyandottes and Pigeons, and M. Louis Vander-Snickt.

The poultry section at the Château is not very large, but excellent in every way and well arranged.



M. LOUIS VANDER-SNICKT, M. LAMARCHE, M. LALOUX, AND M. BRACONIER.

[Copyright.]

Mr. Edward Brown's "Report on the Poultry Industry in Belgium," recently published. And something was said in our March issue (Vol. II., page 315) as to the sportive side as expressed in cock-crowing matches.

The President of L'Union Avicole de Liège is M. Ivan Braconier, member of one of the leading families of that city, an energetic and generous supporter of everything connected with poultry-production, whether for pleasure or profit. He is also a practical breeder, and has every opportunity for giving vent to his tastes at the Château de Modave, gloriously situated among the Ardennes, about forty miles from Liège. No one who has not

In addition to fowls kept for supplying the household requirements, and a fine lot of pigeons, out in the park are flocks of wild turkeys, almost black in plumage. These are allowed to breed naturally, but of course few have the opportunities of keeping turkeys in this manner, nor is it upon business lines. There is also an excellent flock of Arsamas geese, kept under similar conditions. But the finest of all are the Muscovy ducks, large in size and wonderfully rich in colour. Probably there is no other such lot of this breed, which has not found general favour by reason of their vile temper.

But the most interesting feature in the poultry line at Modave is a breed in process of making.

and which may capture an astonished world, or it may not. Upon it M. Braconier has been engaged for six years, and has succeeded to the extent that the name of the Château has been given to it. The basis upon which the superstructure is being built is that in the first instance a Faverolles cock was mated with an Orloff hen and an Indian Game cock mated with a Faverolles hen. The progeny, which practically consisted of half Faverolles and one-quarter each of Orloff and Indian Game, were afterwards mated, and from these by selection the Modave produced. As will be realised, there is a good deal of affinity between the Indian Game and Orloff, but the latter have muffs and beards, which the former have not. The result is a large, upright, massive fowl, fuller in feather than Indian Game, and shorter in the

leg. In plumage the cocks follow the dark Faverolles but are clean-legged, the skin and flesh white. The hens have salmon-coloured bodies, striped neck hackle, splashed with black on the back, and dark tail. The muffs are black above and white below. They are deep in breast and very abundant in flesh, which is beautifully white and fine in flavour. The eggs laid are very dark shelled and rich. There has been considerable variation in the productiveness as to number of eggs, but some of the hens have laid 200 to 245 in their first year of profit. Winter laying is their chief quality, in which respect they are said to excel, and continue to do this for three years. If, as a result of further experience, the Modave succeeds in maintaining its economic qualities, it should be a valuable addition to our races of domestic poultry.



Sale of Poultry in New Zealand.

The *New Zealand Poultry Journal* gives a description and photographs of a great poultry market at Canterbury, in that Colony, where cages are provided for 3,000 birds, and last season upwards of 100,000 fowls were sold by auction.

An African Experimental Farm.

About six miles outside Bloemfontein is the "Groote Vlei," one of the experimental farms of the Orange River Colony. The situation is an excellent one, at an altitude of nearly 5,000 feet. Only two breeds of poultry are kept—namely, White Leghorns and Plymouth Rocks. The former have proved to be excellent layers. Scattering fowls all over the farm is preferred, and they are said to do well there. The poultry is in charge of Miss Sillar.

Egg Circles in Victoria.

Evidently co-operation in egg-production is extending in Australasia. The *Standard of Empire* says:

Mr. Graham is advocating a co-operative scheme for the marketing of eggs and poultry. Mr. Graham proposes the expenditure of £1,500 a year for a year or two in the establishment of a number of "egg" circles throughout the State. He has been assured by expert advisers that the scheme will be-

come self-supporting in Victoria in three years, and that in five years it will raise the State's annual production of eggs and poultry from £1,750,000 to £5,000,000.

Canadian Poultry Prospects.

Prof. Elford, of Macdonald College, in Quebec, is sanguine as to the prospects of poultry-keeping as a branch of Canadian agriculture. He states that statistics show the annual profits of poultry work out at 239 per cent.; from milch cows 95 per cent.; and from fruit cultivation 88 per cent.

A Poultry Show at Allahabad.

In addition to the poultry-farm which will form a feature of the Agriculture Court at the forthcoming Allahabad Exhibition, the authorities have decided to include a competitive Poultry Show lasting for at most two or three days, as it is realised that many poultry fanciers in the United Provinces will wish to exhibit, who do not see their way to leave their birds in the Exhibition for the whole period of three months. Substantial prizes will be awarded, and the prospectus and conditions of the show are to be issued very shortly. The date will be announced later, but the show will take place some time during the latter part of December.—*Pioneer Mail*.

WHAT IS BEING DONE IN SOUTH AUSTRALIA.

THE annual report of Mr. D. F. Laurie, Poultry Expert to this Colony, is good reading, and records the strenuous efforts being made to promote the poultry industry in South Australia. As the Minister of Agriculture states, in presenting this report to the Governor of the Colony: "I have reason to believe that by fostering this industry, and improving the system of marketing, it may become a very substantial staple of the State."

Mr. Laurie gives in detail information as to the general aspects of the work, particulars of the Poultry Stations, the Laying Competitions, &c. We learn that at Roseworthy there are 282 separate pens. The following quotations will be read with interest:

work up table-bird-breeding. He also prepares and packs, at the Produce Dépôt, poultry for export during the season. The excellent prices realised for poultry shipped to England this season have stimulated our breeders in a wonderful manner. From communications, written and verbal, a very much increased export may be looked for next season. Generally speaking, there is an improvement in the quality of table-birds in the Adelaide markets, and the demand is much improved. Despite the high prices recorded in Adelaide markets for occasional small lots of poultry, the results of the English shipments are far better. I am making special efforts to organise the shipments at an earlier date, so as to reach the markets during the periods of great scarcity and high prices. The poultry grader will visit numerous shows in the country in charge of a Government exhibit, and will give demonstrations in dressing poultry. By this



NEW BUILDINGS AT ROSEWORTHY POULTRY STATION, SOUTH AUSTRALIA.

"No shipments to England were made during the season 1908, owing to the abnormal price of eggs. The price at the time when the eggs for shipment should have been collected ranged up to eightpence a dozen, which was considered too high to permit a margin of profit. However, eggs were scarce in England, and our shipments would have realised a very material advance on Adelaide prices. Market reports, as published in the Adelaide Press, indicated that the advance was due to an unprecedentedly heavy demand in the other States. In due course I supplied the Press with figures of quantities of eggs transferred each month to other States, giving declared values and also showing cost of shipment and net results as compared with ruling prices. Facts and figures failed to reveal any such increased demands. The individual increase in the output of one or more firms does not necessarily warrant an increase of general demand and supply.

* * * *

"During the year a poultry dresser and grader was appointed, and has been detailed by me to

method I hope to awaken a great interest in the table-poultry branch. Recent experience promises abundant results.

* * * *

"The outlook of the future of the poultry industry of this State was never so full of promise—promise that will be fulfilled. Years ago, when the first course of the structure was being laid down, I foresaw that production would increase, and that outside markets must be exploited. The events of recent years have marched apace, and the question is now not so much of an unsaleable surplus as of sufficient production to supply our new markets. Egg-production alone is highly profitable, and as our breeders gain experience in feeding table-poultry for export, that branch must prove equally remunerative. The methods of housing, yarding, and feeding instituted by me at Roseworthy prove what can be done with large numbers of fowls, and the old cry that big poultry plants will not pay is now without foundation as regards the birds; but as regards the man at the helm—that is another matter.

"It is cheering to report that several experienced breeders are erecting large plants for egg- and table-bird production on a large scale, and state their intention to assist the State work in the export trades. Co-operation and combined action among a score or so of large poultry-breeders would result in permanent benefit to the industry. This will come about in less time than is anticipated. I can confidently advise breeders to extend their operations as largely as they are able. I can find ready sale for all prime poultry products.

* * * * *

"The season is opening well, and I anticipate that breeders will have a successful season; and, although the price of foodstuffs is somewhat high, a good layer will, even at higher prices than now ruling, return a very substantial profit over cost of food. It is the unproductive that should be killed or disposed of."

Egg Circles in South Australia.

In a report of the first six months' operations made to the Minister of Agriculture for South Australia, Mr. A. E. Kinnear, Organising Secretary of Egg Circles, states:

The movement was initiated with the idea of placing the industry on a satisfactory footing, and of establishing a system of combination among egg-producers that would enable the overseas business with England to be satisfactorily developed. Mr. Kinnear states that in other trades quality is always the basis upon which a successful business is worked up, and this has been the keynote of the success of the egg circles. Work was begun too late to get together a sufficient number of eggs to make a shipment to England; and, moreover, the Australian rates were payable, so that there was no occasion to ship. Mr. Kinnear thereupon set to work to establish a trade in the other States with graded circle eggs, and after much opposition this has been successfully accomplished. Twenty-nine egg circles were established during the six months, and the members have taken such care with the eggs that it has been possible to pay more money in the centres where there are egg circles than was offered by any merchant, store-keeper, or trader. The circle movement, it is further reported, has had a remarkably steadying effect on the local market, and a regular sale of eggs in grades in Adelaide, Sydney, and Melbourne has also been established. Considerable opposition was encountered from Adelaide traders, but repeat orders are coming in freely, and the Department has been able to obtain better than the Adelaide market rates by one penny to twopence net for No. 1 grade and halfpenny net for No. 2 grade. The biggest and best manufacturers in Sydney and Melbourne are on the Department's books. The report further states that the consumer has been supplied with a better class of egg, and has received more for his money even at the extra price charged. A new business is not usually expected to show profits the first year, but after making every debit that would be made by a business house, and paying better than the market price for eggs, there was a profit for the six months of £328. Mr. Kinnear has recommended the Minister to approve of the establishment of a city depot, so that eggs may be better and more cheaply handled than at the Port Adelaide depot.

Mr. Kinnear says further:

The climate of South Australia is admirably adapted for the production of eggs. At present it is estimated that the annual value is £500,000, of which about 25 per cent. is exportable surplus. Within the last two or three years the people have awakened

to the financial possibilities in good fowls properly handled, and in my opinion it only needs the stimulus of "more money for eggs" to cause a big increase in production. The egg circles have supplied that stimulus—we are already paying our members better money than anyone else—and the prospects point to a big expansion. The formation of fresh circles has been stopped pending the completion of harvesting operations, but shortly the Poultry Expert will begin a vigorous campaign in the country. Big circles are expected to form at Balaklava, Sedan, Minlaton, and other centres. Several circle members are adding to their plant and flocks, and appearances denote that next year will see a very large number of eggs handled by the circles. The rent paid to the Produce Department for packing and storing accommodation is already a handsome item. It should be doubled next season, and employment provided for twenty or thirty men as testers and packers. The improvement in quality, which is the main plank of the circles system, will no doubt stimulate the local demand for eggs, and altogether the prospects ahead of the movement in South Australia are most encouraging.

SOUTH AFRICAN POULTRY ASSOCIATION.

THE annual meetings were held at Bloemfontein on March 29 and 30, at which there was a good attendance.

His Excellency Sir Hamilton Goold-Adams, Governor of Orange River Colony, was present at the opening, and in the course of an address said:

He felt there were great possibilities in the industry represented by the delegates and hoped the result of their deliberations at this and similar conferences would be to improve the quality of poultry in the country and increase the egg supply throughout South Africa, thus doing away with the necessity for importations. He was glad to know that the Orange River Colony had done its share to this end and was now in a position to export eggs. He thought one of the difficulties to be overcome was the difficulty of getting eggs to market in a sufficiently fresh condition to be of value to the consumer, and had in the past offered to supply £150 from the Land Settlement funds to forward this object, and whilst his suggestion had not been acted upon he was still willing to recommend the allocation of that amount if means could be devised to attain the desired end.

A lengthy report was submitted, in which the effect of a United South Africa was mentioned, in so far as poultry questions are concerned. From this we make the following quotations:

We are now on the eve of having our Colonies united, and we feel that under Union our efforts will be encouraged more and more as time advances, as the general treatment of matters will naturally be more uniform. At present our affiliated clubs have not the same opportunities, as the Transvaal Government allows 10s. in the pound on all subscriptions, gate-money, &c., the maximum to any one club being limited to £100. The Cape Colony allows five-sixths on all prize-money paid out on behalf of poultry. Natal, we understand, does not make any grant. Orange River Colony is also, we understand, situated somewhat similar to Natal. Railway facilities are also not uniform, and thus we feel that, under Union, matters will be arranged on a more equitable footing and general advancement will be the result.



Summer Rearing.

The trials of the earlier months of chicken-raising are almost forgotten when we enter upon summer rearing, which is indeed the only chicken-production known to a vast multitude of poultry-keeping farmers. Although it is not a fact that chickens will look after themselves in summer, it is quite true that they may then be grown with much less trouble and discomfort than in the earlier season. Nevertheless, it is not profitable to presume too far upon their ability to exist more independently now than then, and a want of method in summer rearing may unduly increase the cost of production. It is always necessary to remember that the great bulk of the average farmer's production of chickens only reaches a marketable size and condition when values are at their lowest. The higgler's best price for a June-hatched bird will be no more than 1s. 9d. or 2s. when it has arrived at a suitable maturity for his purpose, and its finished or fattened value will be proportionate. Any prolongation of the rearing period, by neglect, is therefore to be deprecated as adding to the cost without increasing the ultimate value. The market which is the end of the present chicken-production is a falling one, and when it touches bottom it will not rise again in time to help those who rear largely in the summer. That the margin of profit on summer-reared birds is narrow is inevitable in the circumstances, and is in due accord with the inexorable laws of supply and demand; but that margin is, under average farm conditions, too narrow to allow any latitude as regards prime cost.

In Practice.

If the month justifies seasonable anticipations, there should be a very perceptible rise in the temperature, for which adequate provision must be made in the accommodation—and this as regards stock of all descriptions and ages. The night quarters must be large and airy, and never filled to their supposed capacity; neither must any birds be too long confined in situations where the morning sun is likely to overheat the houses. Brooding-houses or foster-mothers that may still be in use should be cleared as soon as possible by the hardening off of the occupants. Those who continue the use of such appliances too long are likely

to have a trying experience; it is usually far more difficult to keep them cool in summer than warm in winter. Coops and hutches should not now be placed too far out in the open upon exposed fields, a preferable situation being along the side of a hedge or sheltering shaw. It is especially necessary, moreover, not to confine hens in coops where they will be in the full glare of the sun, and if they cannot be allowed that freedom which is better for them and their chicks, they must be sheltered. Water is a common cause of summer disorders, especially among the young stock, and where there is no pure fresh supply, such as a running stream provides, the vessels must be set in the shade and refilled at frequent intervals. Parasites of various descriptions multiply wonderfully during hot weather, and must be guarded against, not only by cleanliness and the use of insect powder, but by the sufficient provision of dusting material in suitable positions for frequent use. However, although minor disorders are commonly more prevalent in summer than in winter, careful management will maintain good health; and amid suitable surroundings young stock should do well and make favourable progress in seasonable June weather.

"Good Poultry Land."

A correspondent who wrote of his property as "good poultry land," was found, upon inquiry, to be in occupation of and running his poultry upon a light sandy soil; and the supposition that land of this description is essentially good poultry land is very common. It may be, or it may not, according to circumstances and the character of the season. It is quite as possible for ground to be too dry as it is for it to be too wet, and the situation that is most suitable for stock at a given period must be chosen relative to the season—but more particularly with regard to the character of the season in the current year. This is obviously not always possible, but upon a good farm range of reasonable extent it is seldom altogether impossible. When land is especially selected for more permanent use, and the area allows no scope for any material change in the character of soil and situation, preference should be given to land that is rich without being heavy—as likely to yield the best average results. The suitability of a very light soil is limited, and when the position is at all exposed the herbage is liable

to become dry and scanty in summer weather; such a situation at such a time being too parched for thrifty poultry-production, the excessive dryness being inimical to health and comfort as well as productive of a shortage of natural "animal" food—however desirable it might be in a wet season.

Miscellaneous Stock.

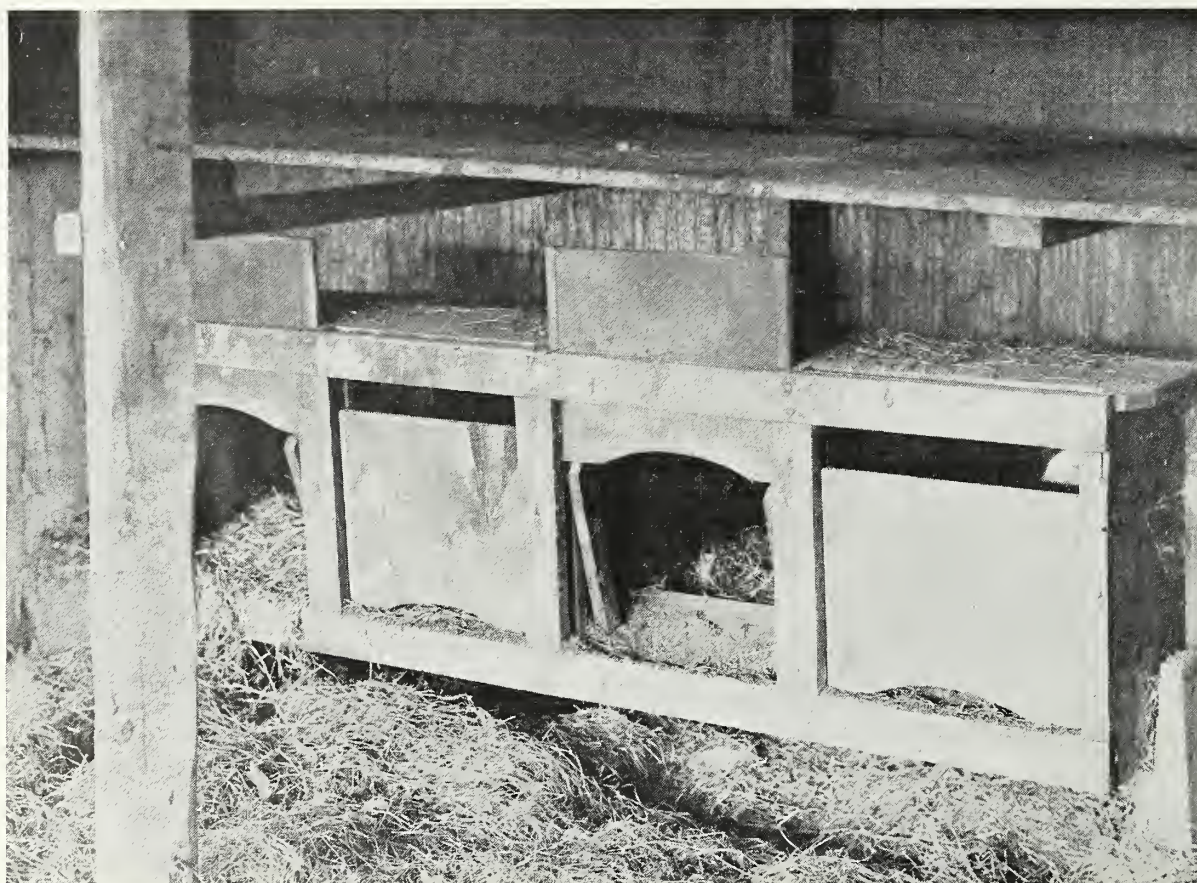
Although special attention has been drawn to the summer requirements of chicken-rearing, the other departments of production all demand careful consideration during the warm weather. The needs of growing turkeys are dealt with in another column, but the goslings that are being run on for the autumn and winter must be suitably provided for in the arrangements. These birds will make a very suitable progress upon a staple diet of grass, but the grazing must be sufficiently extensive, otherwise the cost of feeding will be disproportionate to the ultimate value. In the same way the ducklings produced for a late demand will do well upon a sufficient extent of good foraging land—provided that sheltering foliage is available. This latter production may be continued by fresh hatchings, in proportion to the future needs and the present reliability of the breeding stock for the purpose. The pullets for the renewal of stock require watch-

TRAP-NESTS AND THEIR USE.

By MISS GALBRAITH.

IN trapping, as in other branches of poultry-keeping, a knowledge of the diseases of the hen is an economic advantage. Had the men who have invented and used trap-nests known more about the characters of hens, good results would have been more quickly achieved. I have been greatly surprised to hear practical men object to trapping, on the ground that it puts birds off laying. If it does that, then the fault lies with the attendant, or with the type of trap used. But I do not think that it does so with traps of a proper pattern, where the handling is sufficiently careful.

Men find, on first trapping, that a pullet often ceases to lay for several days after starting, and ascribe this to the fright. The truth is that it is a usual thing with pullets, but how many busy men have noticed what happens at the laying of first and second eggs among the untrapped birds? They rarely identify individuals with eggs, are not likely to be present each time during the first few days, and consequently do not often know how the pullet behaved at starting. But I have found that those who fancy that trapping upsets the birds are men



AN EXCELLENT TRAP-NEST.

[Copyright.

ing during the summer in order to ensure a continuance of growth and development, which would be seriously hindered by any set-back consequent upon the altered conditions of the season. They require an extensive grass range and good frame-forming food—avoiding fattening and stimulating ingredients.

who use traps that are fatal to nerves. They generally open from above. Anyone with a knowledge of the wilder breeds can tell that to approach them, even on the open nest, from above is impossible, and when trapped no nervous hen will sit still while the roof is wrenched off and a great pair of hands descends upon her from above, but almost any will

allow any attendant she knows, who moves cautiously, slowly, and very quietly, to slip a hand *under* her from the front. If a pullet be watched and allowed to come out instantly when she finds herself trapped, she will return again and soon gain confidence; and those who understand wild life can tame even a Black Leghorn or an Ancona in a few days. My

disarrange the catch of the neighbouring traps so that all fall shut. The hens generally end by deserting this nest and laying in the litter. Decidedly, pullets commencing to lay are put off for several days by such a trap. Another type they ignored altogether for months, until the inventor suggested some alterations, when three pullets immediately



THE HINWICK TRAP-NEST.

[Copyright.]

usual plan is to let them dash out as they please the first time, and on the second to raise the front of the trap so that they run out into two outstretched hands, held quite still under the shutter, and so are caught without any flutter; then, holding the legs firmly, to lift them on to my lap and give a few grains of food, together with a little petting and smoothing. The high position occupied by the Black Leghorns in both of the Bagshot competitions is a proof that, wild enough as they were—and they were “terrors” at first, as my scratched face and torn gown testified—yet they were not handicapped by the trapping.

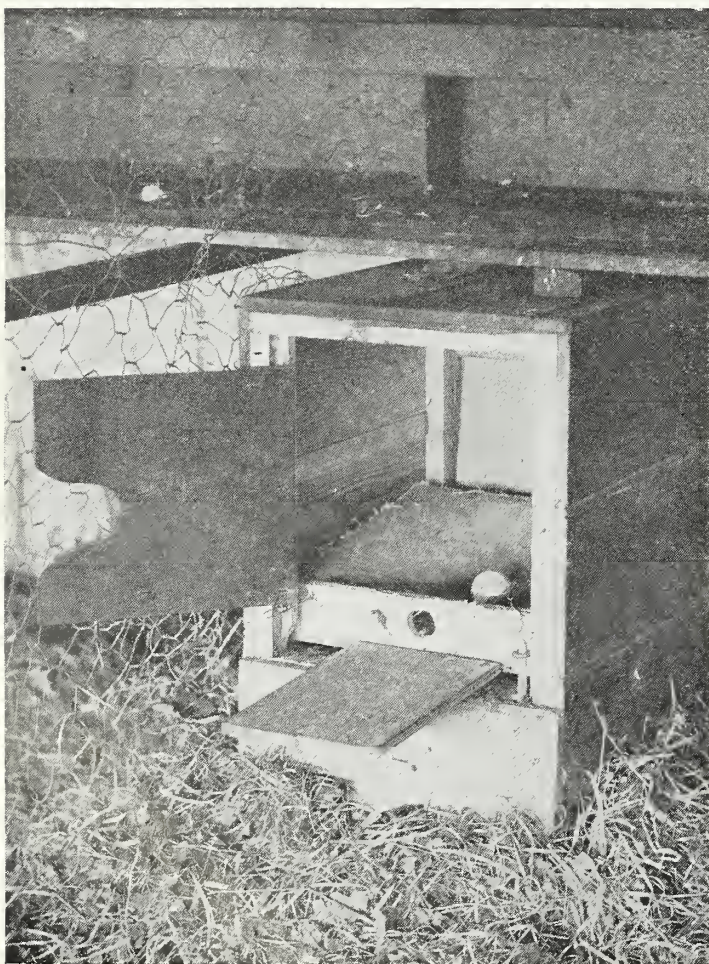
But I have known the tamest birds, well accustomed to trap-nests, go mad with terror when I have attempted to get at them from the top. They rushed round the inside of the nest while I vainly attempted to pin them, and in the end dashed wildly over my head or shoulder. The whole proceeding is such an unsuccessful scrimmage that in such nests the lighter breeds must be seriously handicapped. I have five different types of traps, worked on three different principles. The worst is one through the bars of which the birds can get their heads. In this they injure themselves and go half-crazed in their efforts to get out, while their struggles usually

took to it. This nest is self-acting and releases the birds into another pen. For those who wish merely to have a record of which hens are laying the type is more useful, as no handling of the birds is needed, and the innumerable visits to release the layers are done away with. For scientific breeding more exact recording is necessary, as the egg must be identified as well as the hen. To this end a catch converts the automatic nest into an ordinary trap. Another with a heavy swing shutter is fairly good, but has the disadvantage that more than one can get in at once, though none can get out. The remaining two give very good results. With one or two slight alterations that shown in the first illustration would seem to be the ideal, as at present it is certainly the hen's favourite. The main failing is a rather narrow entrance board, so that while contemplative, heavy birds are always trapped, light, active little Leghorns skip in without treading on the critical spot. Were the shutter of wire in a wooden frame, so as to give more air, and the whole nest somewhat deeper, little would be required to reach perfection, for the absence of mechanism allows of easy cleaning, while the legs raising the nest prevent litter being scratched in to interfere with the working, besides making it much

easier for rheumatic poultry farmers to reach the eggs; which last is a consideration, especially where stooping leads to heart trouble.

After having personally trapped hundreds of hens, young and old and of many breeds, I am fully convinced that a knowledge of how to treat and handle the birds will effectually prevent any loss of eggs from the use of traps. As to the frequent complaint that birds often lay outside of the trap, this can be entirely obviated by the construction of the house and the position of the nest, provided that a sufficient number of nests be supplied. For three years I carefully watched and tested ordinary nests in all positions, and found that there was only one on the whole farm in which the hens laid quite unfailingly. That was a packing-case at the back of a small cart-shed. Rather than lay outside of that nest, I have known the hens to sit seven and nine at a time in it, although there was plenty of hay round about and an unused corner at their disposal, but they preferred to trample, and be trampled by, one another in that one seductive nest.

Therefore, when new fowl-houses were erected, they were made deep instead of long, allowing room for the scratching-shed in front of the perches, and



A THIRD FORM OF TRAP-NEST. [Copyright.]

the nests were placed at the very back, under the dropping-boards, exactly in the position of the packing-case in the cart-shed, and facing the light. For though hens like seclusion, they are wary, and prefer to face the enemy, and if they cannot keep an alert eye on their surroundings they grow restless and

nervous. A sufficient number of traps were put in each house to provide one for every two hens and to fill the space fairly full, so that there should be no attractive places between two nest-boxes; and, lo! the problem which had worried every manager of laying competitions was solved. Not one per cent. of the eggs in the year escape being laid in the official nests, unless dropped from the perch, as occasionally happens with pullets or very old hens. And perhaps one of the greatest advantages connected with the use of trap-nests is that we are enabled thereby to keep our best layers for many years, instead of throwing away good material at the end of every two years; for while a pullet may be more profitable than a hen, it is doubtful if the advantage is great enough to make up for the large outlay in money and time spent in the rearing of chicks to replace the entire stock every two years. At any rate, a bird in the hand is worth a good many in the egg, and when I get a good layer I keep her for six and even eight years, if she prove worthy—as she often does. Amongst the old hens the trap-nest is invaluable for a month in spring and again in August. No one cares to waste time trapping the ancients all the year round, but it is not so easy to tell when a healthy old hen is laying as it is in the case of a pullet. Recently I inquired regarding certain hens, but my assistant could not tell what they were doing, so the traps were set going, and revealed the fact that while the average for the three-to-five-year-olds was nineteen eggs for the month of April, there were three amongst them that did not average five each. To an experienced eye two of these were obviously past their best, but I do not think anyone could have detected the third without the aid of the trap, unless they had been familiar with her egg.

While there is no doubt that the single-pen system is the surest and, it may be, the cheapest in the end, still it precludes the possibility of keeping the hens at large, which in this climate would appear to be the only way to get that enormous vitality and stamina which are so essential to the production of a high egg yield. The trap-nest does not interfere with the liberty of the birds, provided that the houses are set out in the open, so that the pullets are not tempted to lay in the hedges, which they seldom do if they have commenced to lay in October or November. By the time that leafy spring arrives they are so accustomed to their nests that they continue to use them, but place the houses near a hedge and all hope of accurate recording may be abandoned. There is nothing for it then but pens with no attractions outside of the houses.

It is difficult to see how any breeder can keep up a high standard of egg-laying if he does not most rigidly select, first for health, and secondly by means of traps, for egg record, though, of course, the results will ultimately depend upon his knowledge and methods of mating.

CO-OPERATION IN SOMERSET.

A PUBLIC meeting was held in the Pen Selwood Parish Room on Friday, April 8, to consider the feasibility of starting a Co-operative Poultry Society and depôt among the villages of Pen Selwood, Bourton, and Stoke Trister.

Owing to a prior engagement, the Rector, the Rev. Newton Parsons, was only able to be present to-

wards the latter end of the meeting. A large gathering was present, with Dr. Pope Bartlett in the chair, and Mr. Williams, of the Agricultural Organisation Society, gave a very able exposition of the need of co-operative effort in the present, and said, *inter alia*, that much useful spade work had already been done by Mr. Gregory, of Pen Selwood. Mr. C. E. J. Walkey in his speech emphasised the absolute necessity of hatching at the proper time of year, and said further that in order that the local society should, if started, become a success, mutual help must be given if profits were to be large, and that egg contracts undertaken should not be on the basis of so many hundred dozens available in the spring of the year, but upon those likely to be had in the late summer and autumn.

A provisional committee was formed, with the Rev. Newton Parsons as hon. treasurer, and Mr. Gregory as hon. secretary. The manager and collector will probably be Mr. Barlow, of Pen Selwood, where the depôt will be, and a further public meeting is to be held at an early date to consider the likelihood of the scheme going through.

THE CARE OF GROWING TURKEYS.

By J. W. HURST.

IN this, the last important hatching month of this production, turkey chicks of various ages—but all quite young—demand more particular attention than will be required at that desirable period when they are usually supposed to be hardened—having exhibited those red appearances about the head and neck that are regarded as significant of emancipation from the dangers of a youthful delicateness. The degree of that early delicacy is subject to some natural variation, and is consequent upon such anterior and present influencing factors as ancestry and management; but that, however unnecessarily, it is almost invariably present (in some measure) cannot be gainsaid. It is one of the penalties exacted by nature for much mismanagement of these birds under domestication, but the elimination of this hindrance to profitable production is largely in the hands of the breeders and rearers. Much may be, and in many cases has been, done to raise the level of constitutional fitness; and the early delicacy diminishes in proportion to the increase of stamina in the stock and the common sense of the treatment of old and young. Such as they are, the young are the immediate consideration. Some are only now just hatched, whilst others are at that parting of the ways signalled by the “shooting the red,” and the quite early broods are already rubicund—having “crossed the Rubicon.”

The latter need not detain us long, either in writing about them or in attending to them. They are now practically on an equality with running chickens, and to that extent the rearer is relieved of much previous anxiety—which is not to say that they will now thrive under a policy of neglect. But from this period onwards the rubicund youngsters may be allowed the freedom of a wider range, housed in a larger shed, and fed in much the same manner and with the same foods as the forward chickens. Perhaps the most important consideration is the character and extent of the range, the growth and development of the growing birds being to a considerable extent dependent upon and propor-

tionate to the suitability of the ground to which they are allowed access. The abundance and variety of the “animal” food and the quality of the new herbage are not the least important of the many advantages of freedom; and of scarcely less consequence is the influence of the exercise of foraging upon



TURKEYS AT LIBERTY.

(Copyright.)

digestion, and a resultant progress and maintenance of healthy condition. As at all periods, so especially now is it necessary to remember the requirements of the gizzard, and to provide grit in plentiful supply and of a suitable size. I have seen it stated that when the birds are big enough to enjoy the freedom of farm lands they will find all they need as regards grit—as well as vegetable and insect food—but this by no means follows as a necessary consequence of freedom. There is a difference between sharp, hard grit and mere stones, and the former is by no means always available without special provision—any more that the growing herbage is essentially suitable or the insect life sufficient for the growing requirements.

Turkey chicks that are under the age of two months are still within the period of more particular requirements that necessitate rather exceptional treatment. In the first place, the average conditions of breeding and rearing under domestication have made it compulsory to keep the young birds dry underfoot and overhead, although in more natural circumstances the hen turkey is quite competent to assume full responsibility and rear her young in the open without the precautions we find

so necessary. Short or close-cropped grass is therefore desirable, and some means of temporary confinement without too close an approximation to indoor conditions should be contrived in case a spell of wet weather prevents outside freedom. The neighbourhood of other fowls is to be avoided, and on no account should the rearing-ground have been previously occupied by ordinary chickens during the same season.

At the commencement the feeding must be early and late, and it should be remembered that their



THE AMERICAN BRONZE. [Copyright.]

digestive arrangements are such that they require but little food at each meal, but that they need that little often. The character of the food must be of the moist but crumbly description, and the ingredients selected and prepared with considerable care. I know of one successful Cambridgeshire rearer who commences with the old diet of hard-boiled eggs, with the subsequent addition of well-scalded biscuit-meal and steamed rice; others there are who believe in starting their birds with a course of curds and fine oatmeal; and I have myself used nothing but Sussex ground oats, sharps, and the inevitable chopped dandelion with equal success. In the use of any ingredient that requires scalding or steaming, the process must be thoroughly performed, but the finished mixture must never be really wet—only moist. Although any approach to the so-called “dry feed” system is unsatisfactory, it is desirable (in addition to the use of soft food as the staple diet) to introduce a very small allowance of small or cracked corn as early as possible, and thus gradually lead up to the subsequent freer use of grain in feeding. Any use, and the quantity, of meat substitutes for natural food must be dominated by the supply of insects, grubs, and worms available on the range; but some additional allowance is commonly desirable at the more critical stage of “shooting the red.”

SOME FEEDING PROBLEMS.

VI. FOOD THE BASIS OF LIFE.

(Continued from page 420.)

ALL of the many manifestations of life, shown in a thousand different ways, are in some manner derived from the food, therefore it may be said that the ultimate object of the food supply to the animal or bird is the maintenance of life and the production of work. The word work is used in its fullest sense, embracing all actions for which energy is required. Doubtless the manner in which food is converted into energy will always exceed man's power to determine definitely. The essential sources of muscular power are seen in the decomposition processes in the body. As the various materials taken into the blood are resolved by the influence of oxygen into simple groups of atoms, the energy of chemical force which previously linked the atoms together in more complicated groupings is set at liberty, and can be employed as kinetic energy for the work of the body.

It has been pointed out that the substances that enter the body as food can be grouped in three great divisions: Protein, Carbohydrates, and Fat. It has been further mentioned that when the protein of the food has entered the body proper, and been broken down, the amount of this loss to the body can be measured by the nitrogen found in the urea. One special difficulty will have to be faced when experiments of this kind are carried out in connection with poultry, since the undigested part of the food from the intestines, and the secretions from the kidneys, together with some other products of metabolism, are mixed before being voided. No satisfactory accurate method is known for separating the nitrogenous residues from the remainder. The carbohydrates and fat, when absorbed in the alimentary canal, may be built up into body fat, or decomposed into carbonic acid gas and water, heat and energy being given off in this process.

Our present knowledge of the fundamental laws that underlie the science of nutrition is unsatisfactory, but there are nevertheless volumes of carefully collected data that make it possible to ascribe fairly narrow limits to their operations. As we have already pointed out, practically nothing is known definitely as to the special science with regard to feeding birds; however, more or less reliance can be placed upon the facts that have been ascertained in connection with animals. In formulating feeding standards, such as will be given later, all reliable data has been considered, but, realising the narrow limitations, it is not suggested that they should be considered final and unalterable. We have carefully considered the available information dealing specially with bird nutrition, the larger fund of fact with reference to animal nutrition, and have based our conclusions on this and the practical information we have gathered as a result of many years' experience in the feeding of poultry scientifically. The poultry-keeper, while following the suggested standard in a general way, should give sufficient consideration to the subject to make special modifications suited to his particular conditions.

One characteristic of birds is their intense vitality. The growth of the young, the digestion and assimilation of the food, and the transformation of the products of digestion into eggs are all exceedingly

rapid. Chickens of 2lb. weight at ten weeks of age show a gain over the weight of the first week of upwards of 1,600 per cent. Ducklings 5lb. in weight at nine weeks old show a gain of upwards of 3,800 per cent. The energy expended is great, and material for its supply is in urgent demand; for a vigorous animal is the seat of rapid metabolic change. Domestic fowls may be classed with other birds as omnivorous, for, although able to live on grain alone, the natural food of the young is largely animal.

In providing a ration it is sometimes possible to arrange one in accordance with the standard, but which will be inefficient if the chemical composition and co-efficients of digestibility are alone considered. The palatability of foods must be taken into account. A large number of the ordinary foods employed appear interchangeable, and many bye-products can be substituted for the different whole grains. Some foods, however, do not seem suitable for poultry even in small quantities. Linseed-meal, for instance, can be fed freely, but cottonseed-meal is not a satisfactory food. Oats, whole or ground, are suitable under certain conditions, but seeing that about 30 per cent. of the whole is husk, the expenditure of energy required to obtain the available material is great, and during the first few weeks of a chicken's life can be better supplied to assist in the rapid growth. On the other hand, those products of oats that consist only of the kernel are suitable at all times. The same applies to all of these foods that contain a large quantity of fibre. We will have occasion at a later date to discuss the suitability and palatability of the varying feeding-stuffs in a similar way to the method employed above. During colder weather the extra energy required for the digestion of the coarse foods evolves additional heat which is useful to adult birds, and it appears that this coarse food can be fed without any disadvantages accruing.

In an earlier issue we have already dealt more or less fully with the various changes that take place in the food during the process of digestion, and therefore it is not necessary for us to treat the subject further. We may just mention, however, that the structure of the digestive apparatus of birds indicates extreme efficiency and the capacity for rapid work. As it is a complicated and delicately adjusted apparatus, experience teaches that it should not be overloaded nor violently disturbed when working at high pressure. It may be said to run at high pressure during the rapid growth of young birds, and the extended laying season.

CONSTITUENTS OF THE BODY.—Before it is possible to make up suitable rations for chickens, so that the necessary constituents can be supplied in the food for the formation of the increase in size, it is necessary to consider what materials are found in the adult body and the proportions in which they are grouped together. A knowledge of this will help in the making of rations not only for chickens, but also for adults during the period of rest. The only reliable work that has been carried out in this direction of which we know is that by Jenter, of the New York Experiment Station. He found that the average composition of the entire body of a hen, including bones, flesh, blood, feathers, and all the viscera, was 55.8 per cent. of water, 21.6 per cent. of protein, 3.8 per cent. of ash, and 17 per cent. of fat; of the dry matter of the bodies of hens 48.9 per cent. was protein, 8.6 per cent. ash, and 38.5 per cent. fat.

In devising any ration, there are two points to be taken into consideration. The first is the nutritive ratio possessed by the mixture, and the second is the potential energy in the nutrients of the food. By "nutritive ratio" is meant the ratio that exists between the amount of the digestible protein and the amount of digestible carbohydrates and fat contained in the food. To ascertain this, the amount of digestible fat is multiplied by 2.3, its heat equivalent, because fat is considered as having this heat value compared with the carbohydrates, the products thus obtained are added to the total quantity of digestible carbohydrates, and the sum is divided by the digestible protein. The potential energy in food nutrients is reckoned in Calories. The Calorie is the term used to designate the amount of heat required to raise the temperature of 1 kilogram of water 1 deg. centigrade, or, putting it into English figures, 1lb of water 4 deg. Fahrenheit. The average energy in 1 gram of each of the classes of nutrients is as follows:

In 1 gram of protein	4.1	Calories
In 1 gram of fat.....	9.3	"
In 1 gram carbohydrates...	4.1	"

Another way of stating this fact is to say that 1oz. of protein or of carbohydrates, if transformed into heat, will raise the temperature of 113lb. of water 1 deg. Fahrenheit, while 1oz. of fat evolves sufficient heat to raise 256lb. of water 1 deg. We are indebted to Atwater, of the Storrs Experiment Station, for these figures. As we will give suggested rations showing the weight of the digestible constituents in pounds, a more available form of stating these facts is as follows:

Digestible protein	1,860	in the lb.
" carbohydrates.	1,860	"
" fat	4,220	"

To determine the total Calories in a ration, the quantity of digestible protein and carbohydrates in pounds are multiplied by 1,860 and the amount of digestible fat in pounds is multiplied by 4,220 and the two sums are added together.

(To be continued.)

THE FOX-HUNTING QUESTION.

HEN OR FOX. By Three Poultry-Keepers. Printed by the Gresham Press, Unwin Bros., Ltd.

THIS is a very cogent statement of the poultry-keepers' case against the Hunts, by three poultry-keepers who are also very well known as writers on poultry topics—namely, Miss Galbraith and Messrs. W. M. Elkington and Wilfrid H. G. Ewart. One of the best points is made by the last-named, who shows that the danger attending the "colony" system of poultry-keeping in a hunting district has restricted, or driven back, the farmers to the old and bad method of shutting fowls up in the farmyard, and is thus retarding the development of the industry on those hygienic lines that educationists are trying to teach. While the result of the Conference is still in doubt, one hesitates to say, or encourage the saying of, anything that may increase the existing friction between the parties and so jeopardise a satisfactory solution. The moral and economic aspects of the matter, however, from the poultry-keeper's point of view, are dealt with so forcibly in this booklet that the reasonable people on both sides should profit by its perusal.

THE POULTRY-KEEPER'S OTHER INTERESTS.

By "HOME COUNTIES."

*Author of "The Townsman's Farm," "Poultry Farming: Some Facts and Some Conclusions,"
"The Case for the Goat," "Country Cottages," &c.*

"Poultry should be only one part of the stock."

—*The Secretary of the N.P.O.S. in the "Cyclopædia of Modern Agriculture."*

BICYCLES AND BOATS.

I was much struck when in Holland recently by the extent to which small holders owned bicycles. I was told—and I have no reason to doubt the accuracy of the statement—that there are more bicycles per head of the population in Holland than in any European country. I have certainly never met with so many in constant use throughout the day. Another means of locomotion in Holland is, as is well known, by means of dogs. This is already prohibited in some towns, and this is an excellent thing, for there is very little to be said for the custom, and a large proportion of the dogs I saw were undoubtedly over-worked. The means of locomotion which is most closely identified with the working of the land is, of course, boats. The holdings in many parts of the country are surrounded and intersected by canals, and the produce is taken away and the manure is brought by water. Indeed, lots of holdings could not be worked without boats.

FRENCH GARDENING.

It is outside my province to speak of poultry, but perhaps I may be allowed just to note the curious fact that not only are white eggs preferred in Holland, but the demand is chiefly for small, or at any rate medium-sized, eggs. Most of the birds I saw were of the Leghorn type, and did not seem to have much quality, and the Buff Orpington eggs I have breakfasted on since my return seemed very large indeed beside the eggs which were on the tables in Dutch hotels. In Holland, especially in the West land, which lies between the Hook and The Hague, there are excellent opportunities of studying French gardening, and as English is pretty generally spoken, the holiday-maker who knew no language but his own would get along all right. Many a small holder would do well to make inquiries as to an outing in Holland.

INEXPENSIVE HOLIDAYS.

In the summer the fares are very low, and the cost of living over there is very low too. Of course, it is as well to keep off the beaten track. One of the most enjoyable ways of seeing Holland is by steamer. There are steamer routes all over Holland, and this canal and canalised river travelling is exceedingly pleasant as well as cheap. There are also electric trams all over Holland, connecting the towns together. Needless to say, a bicycle is an excellent means of locomotion in the Netherlands. It is not only that the roads are level, but they are nicely brick-paved in many districts. The wind is a bit trying at times, but the country is so small that short journeys take one from one town to another. Few small holders who went over to Holland with their eyes open would fail to pick up

useful wrinkles. As is well known, a large part of our early vegetable produce, as well as fruit, comes from Holland, and the skill with which it is grown is noteworthy, as the conditions are far from being always favourable. In flower-growing the Dutch are, of course, unrivalled, and as general nurserymen their plants are known all over the world. The problems of marketing have been most successfully solved in Holland, and anyone interested in co-operation will be struck by the extraordinary developments which have taken place in this direction.

SOME POINTS ABOUT FOOD.

A distinguishing characteristic of the Dutch small holders is frugality. This is a prime secret of his success. It is astonishing how economically he lives. He works very hard indeed, but does it on the simplest fare. As he is not a great meat-eater, a large proportion of his food comes from the land. I do not know that some of our small holders have not something to learn from his sparing ways. The Dutchmen have reduced their food expenses to the lowest possible limit, and, as economists of various nations have shown over and over again, are practically impregnable against bad times. Those who visit Holland should undoubtedly take their womenfolk with them in order to get some points about cooking vegetables. The average Dutch cook can give points to the best of our vegetarian restaurants.

CARNE MELK.

I noticed with interest the sale of *carne melk* in different parts of the country. This is, of course, our friend butter-milk, which some of us have sworn by since our youth, and is now coming into such celebrity. It is a great pity that the custom of drinking butter-milk has gone out in so many districts. It is practically impossible to get it in many parts of our country. If butter-milk were a regular drink among small holders they would have few doctors' bills.

PLANTING EXPERIMENTS.

I am just banging thirty-six shillings on a supply of peat for rhododendrons and azaleas planted above my clay. These things will not, of course, grow in soil which does not approximate to that to which they have been accustomed. I am digging out large holes and filling in the bottom with approximately good decayed vegetable matter and topping off with a better mixture. I regard the flowers as an addition to the value of the property, as there are none in my neighbours' gardens—at least, none that are flourishing. I tried some time ago to make heather grow in my garden, but it languished until I sent for some peat soil from Scotland and watered the heather with some of it

in water and applied the other dry. From an artistic point of view the introduction of plants into districts in which they do not grow naturally is to be deplored, no doubt, but it is very nice to see heather, rhododendrons, and azaleas. Nor do I repent having introduced firs and larches to the clay.

GORSE.

I am rather proud of myself this year, because some gorse which I raised from seed is at length in flower. It is wonderful how nice a piece of gorse is in a country in which one sees nothing of it in the ordinary course. I suppose it is now generally known that there is a good deal to be said for gorse as food for horses. I once rode behind a very efficient little pony in France the owner of which declared that it was living almost exclusively on gorse, beaten, of course, with wooden mallets—the gorse, that is, not the pony.

CYCLE CAMPING OUT.

I have already spoken of cheap holidays. Surely the cheapest of all holidays that a poultry-keeper can take, who is waiting for a really good year, is a holiday obtained by cycle camping. There are two societies in existence devoted to cycle camping, and those who have not investigated the possibilities of this form of recreation and have not deep pockets may be recommended to look into the subject. The camp steward of the National Camping Club is Mr. T. H. Holding, 7, Maddox Street, W. The Amateur Camping Club, incorporated with the Association of Cycle Campers and the Camping Club, has its offices at 6, Duke Street, Adelphi, and the secretary is Mr. A. P. Moeller. The novice may apply for the A.C.C.'s handbook. It also publishes a little monthly. The details of kits are marvellous. No one can believe who has not looked into the matter how large a supply of necessities can be got on a bicycle without making it unnecessarily heavy. Among campers there are many enthusiasts who are continually inventing things. One reads, for instance, of a new tent which has been detached from the cycle and erected in four minutes, and struck and repacked in something like six minutes! Great economies may be effected by having tents made at home. Accurate patterns are supplied by the A.C.C. The material is of astonishing lightness, but really keeps the rain out.

BELGIUM AND DENMARK FOR POULTRY-KEEPERS.

Belgium and Denmark are two other countries that are peculiarly suitable for poultry-keepers to holiday in. Needless to say, the first things to be bought when preparations are being made are Mr. Edward Brown's illuminating reports on the poultry industry in Belgium and on the poultry industry in Denmark and Sweden. The price is one shilling each. Whether it would pay cyclists better to take their cycles with them or hire them on arrival is for them to decide. Poultry-keepers need have no qualms about leaving the beaten track when they get across the North Sea. If their knowledge of the language fails there is a bond of union between them and their rural hosts in their common interest in fowls.

THE CAMERA.

I have more than once spoken of the value of the camera to the poultry-keeper. What con-

tinually strikes one is that, in spite of the enormous output of photographs of rural scenes for the illustrated Press, there are always such lots of subjects left. I have been greatly interested, for example, the last day or two, in the behaviour of a great bank of dandelions in view of my study. When it is sunny they are a blaze of yellow. When it is wet or overcast they are as tightly shut up as a closed umbrella. There is a subject for two interesting photos, and the poultry-keeper's camera can just as well secure the ten shillings that would be probably paid for the pictures as anybody else's.

REVIEW.

CANADA AND THE UNITED STATES.

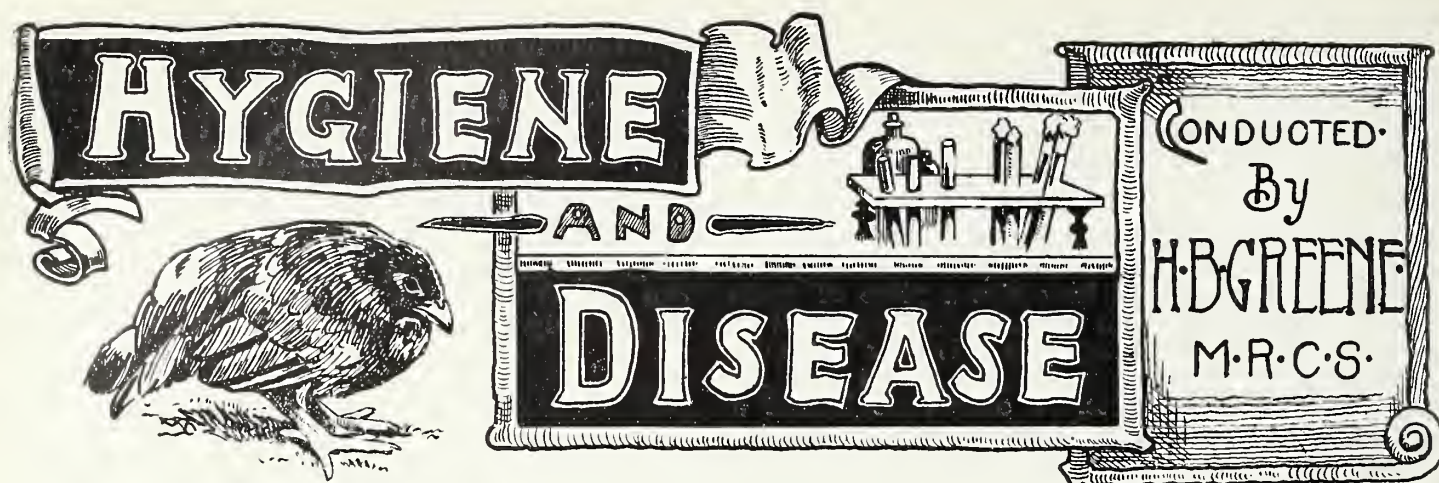
LAST year Herr W. A. Kock paid a visit to America, commissioned by the Danish Department of Agriculture, and his report has just been published under the title "*Hvorledes Drives Praktisk og Okonomisk Fjerkræavl i de Foremede Stater og Kanada*," by Det Schonbergske Forlag, of Copenhagen, making a handy, well-printed, and illustrated book of 96 pages, published at 1s. 6d., post free.

Herr Kock devotes several pages to a description of the colony house system as seen in Rhode Island, and especially on the farm of Mr. Fred Almy at Little Compton, which system he regards as the best method of poultry-farming met with in America. He also gives information as to the system of producing soft roasters in Massachusetts. The duck plants interested him greatly, as they must anyone visiting them and seeing the many thousands of ducklings massed together in runs. A great development has taken place on Long Island, and at the Atlantic Duck Farm, Speonk, 70,000 to 75,000 birds are reared annually. An interesting account is given of the Beaumont Duck Farm at Doylestown, near Philadelphia, where Muscovies are crossed with wild ducks. This is called the Brazilian Duck Farm. Seven hundred breeding ducks are kept housed in common buildings, and to every duck is a drake. As soon as a duck has laid twenty eggs she becomes broody, and, as hatching is entirely by natural methods, she is permitted to do so; but each duck produces annually nearly 100 eggs. They commence to lay in February and cease in September, and the number marketed is 18,000 to 20,000 per annum.

It is impossible to deal fully with this useful report, which tells about the Colleges, Experiment Stations, exhibitions, marketing, &c., and much is said about cold storage.

Respecting special Canadian questions, Herr Kock calls particular attention to the fact that in the Colony poultry-keeping is a branch of farming, and that large poultry-farms are seldom met with. He visited several places where this side has been taken up largely, and also describes his visits to Guelph College.

After inquiries into squab pigeon-breeding (at one place visited 9,000 pigeons are kept and 42,000 reared annually) Herr Kock does not think it would be profitable in Denmark, and is doubtful whether it is so in America.



POST-MORTEM EXAMINATIONS.

We have made arrangements by which post-mortem examinations of poultry and game can be effected for our readers upon the following conditions:

1. *The specimen is to be forwarded postage or carriage paid and securely packed to "Biologist," 297, Truinity-road, Wandsworth Common, London, S.W.*
2. *The fee of 2s. 6d. (stamps will not be accepted) must be remitted with each specimen and a letter giving particulars of feeding and housing, or any symptoms which were observed before death.*
3. *Birds should on no account be addressed to the office of the paper. If forwarded there they will be returned to the sender.*

It is recommended that specimens be dispatched by parcels post, where practicable, and as soon after death as possible. A reply will be received by letter, defining the disease, its cause, treatment, and prevention.

Overfed Poultry.

It is very seldom indeed that poultry are allowed to suffer from want of food, and a hen that has died of starvation is almost as rare a sight as a dead donkey. In fact, it might be no exaggeration to say that for one calamity from this cause there are fifty from plethora induced by over-feeding. And especially at this time of year, when eggs are on the wane and laying hens are waxing fat, does one meet with the greatest number of fatalities from this kind of mismanagement. The history of all these cases is the same. The owner generally affirms that the fowls have been laying well and went to roost after the evening meal apparently well. In the morning one is found dead under the perches or in a nest-box. He cannot understand it, as the birds are *well fed* and cared for, and he has had three or four other losses in exactly the same way during the last week or two, and if he adds any details of feeding it will generally be to the effect that potatoes, maize, or barley have played a large part in the diet.

Consequences of Overfeeding.

The conditions found on opening one of the victims are: Hæmorrhage from a ruptured blood vessel, sometimes of considerable extent, it may be in the liver or brain but most commonly in one of the lungs. The bird will be found to be exceedingly fat and heavy, especially in regard to the

offal, with liver and kidneys enlarged and softened from fatty degeneration and a heart larger than the normal. These results are all to be traced to overcharging the system with food of a fat-forming character at a time when supplies should be reduced and varied in accordance with the decline in the egg-producing functions. Hens will stand a good deal of overfeeding as long as the surplus is carried off in the eggs being laid, but even with such a safety valve, fat gradually accumulates. Then as soon as the eggs cease to come, the blood pressure is at once increased and apoplexy ensues.

How to Counteract Plethora.

When fowls are suspected to have got into this plethoric and overfed condition drastic changes must be at once made in the kind and quantity of food. No maize, barley, or potatoes are to be allowed and for two or even three weeks one feed will be found quite sufficient if the birds have a grass range. If they are penned, then a second meal of green vegetables, chickweed or dandelions is permissible. During this penitentiary period the single feed may be chosen from oats, dani, middlings, and biscuit meal, and the amount given is to be strictly limited. This dietary treatment can with advantage be supplemented with a weekly or bi-weekly dose either of one grain of calomel, given in a pellet of meal, or a saltspoonful of Epsom salts. Whatever may be said in favour of a judicious allowance of maize during cold and bleak weather, there is no question that there is wisdom in withholding it altogether during the summer months.

Heat Stroke.

The apoplectic seizure which ends the career of an overfed fowl is not to be confused with heat apoplexy, the consequence of direct exposure to the sun's rays or of confinement during hot nights in coops and houses inadequately ventilated. Poultry of all varieties and ages are liable to heat stroke, but ducklings and goslings are especially prone to suffer, and are ill-adapted to resist even a short exposure to a very strong sun. Poultry-keepers are too often inclined to forget this, and many ducklings are lost every year for want of shade. The distinguishing features of the onset of heat stroke are its suddenness, the fact that a number of birds are attacked together or within an

hour of each other, and the rapidity with which death occurs after signs of exhaustion, difficult breathing, staggering, twitching of the limbs and general convulsions. When any of these signs are noticed, the first thing to do is to remove all the flock to the coolest and most shady spot available and see that they are provided with drinking water. Those affected by the sun, if seen early enough, may often be saved by placing them in cold water or under a running tap for five or ten minutes, allowing the water to drip on the back of the skull and along the spine, afterwards drying them and giving ten or twenty drops of brandy to counteract exhaustion. The symptoms of heat apoplexy resemble those of ptomaine poisoning. In the former, however, the onset of the illness is extremely sudden, and the interval between the first signs and death is shorter. Besides, the fact of exposure to sun or a close atmosphere, the numbers affected at once, and inquiry into the wholesomeness of the food will, if considered together, help in making the distinction, and if there still is a doubt, a post-mortem examination will decide it.

CROWING HENS.

By H. B. GREENE, M.R.C.S.

"A HEN that crows, a parson that dances, a woman that talks Latin, never come to any good." So wrote one, Peter Boswell, in a small but excellent treatise entitled "The Poultry Yard," published in the early part of last century; a little volume which teems with sound, if sometimes dogmatically expressed, advice on things pertaining to poultry, and proves Peter to have been a man of no ordinary discernment. Possibly his pronouncement upon classical females, terpsichorean clergy, and crowing hens was not original, and might have been one of those quaint countryside sayings one unexpectedly comes across even to this day in remote districts of England, and especially of Ireland and Scotland. For proverbs expressing more or less the same idea, but in different terms, are numerous, and many localities have their own special version.

These versions in one respect all agree in condemning the crowing hen as something undesirable and altogether to be proscribed. In another particular many of them go yet further, and convey by the sense of their meaning a delicate but unmistakable suggestion of sex inversion being in some way concerned with the production of the phenomenon. For instance, in the above quotation the dancing parson was doubtless condemned, not so much on account of his addiction to the practice of what in later times has come to be accepted as a healthy exercise as for indulging in an art then held in some degree of contempt as being effeminate and unmanly. And if shrewd Peter Boswell could again be translated to this world he would find women who could talk many things besides Latin. Nevertheless, he would be more likely to recognise the counterpart of his classic virago in a London police-court on the morning after a female raid on the House of Commons rather than at Girton or Newnham. Moreover, this association of the idea of the crowing hen with, on the one hand, extreme effeminacy in a man and,

on the other hand, aggressive masculinity in a woman is something more than a chance comparison. It affords a clue, and probably a very important one, towards solving the difficult problems concerned with the question of the relationship of the sexes and their place in the universe.

In extreme types of sex variants the sex characters have been modified and perverted either by inborn anatomical or physiological deficiencies, or by disease or mutilation of organs directly concerned with reproduction.

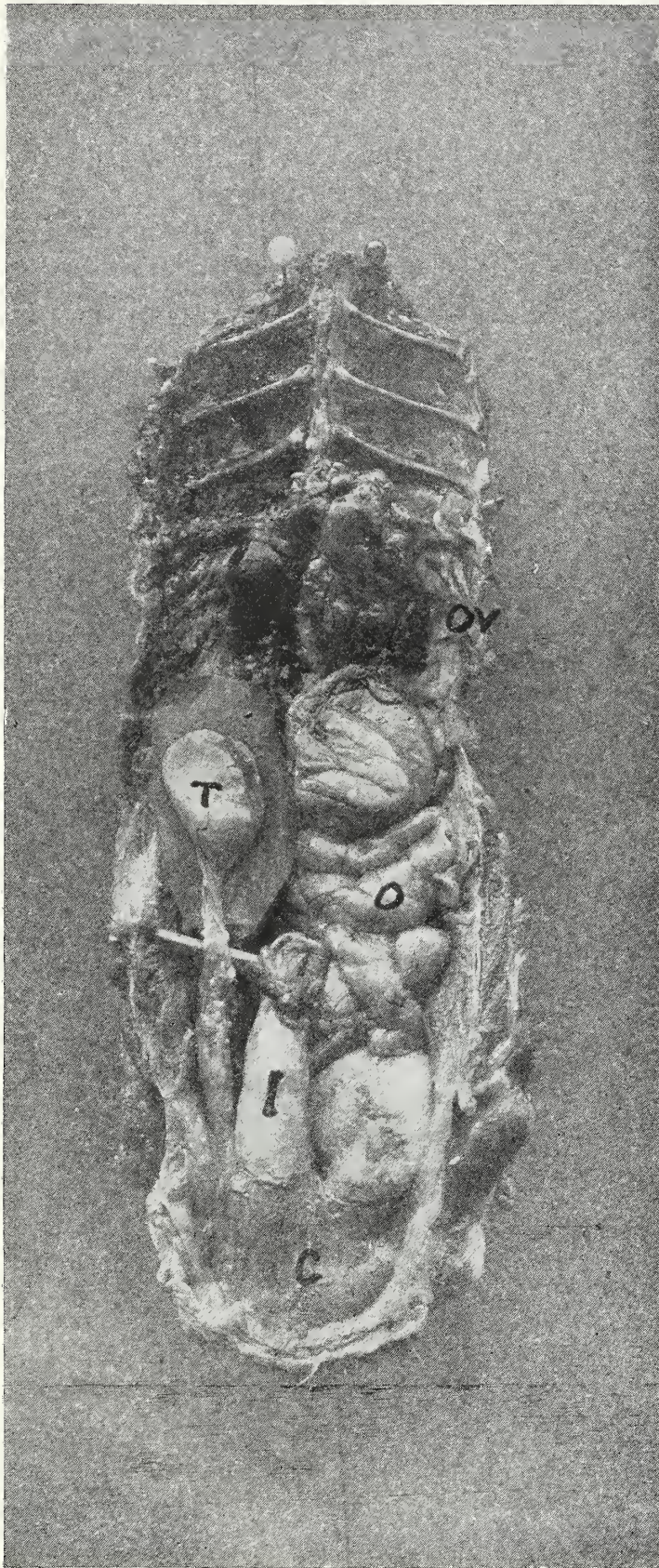
The history of a crowing hen is generally supplied in something like the following terms. A pullet, representing all the outward appearances of such, is observed to lay but few eggs, and those, perhaps, at considerable intervals of time. Towards the middle or end of the first laying season, sometimes at the end of the moult, the bird is noticed to have altered in respect especially of its plumage. This, in time, comes to resemble that of a male



HERMAPHRODITE FOWL.

[Copyright.]

bird, not only in the more brilliant colours of the feathers, but in the length and manner of their distribution. The hackle grows long, as do the saddle feathers, the sickles, and the tail. The wattles and comb thicken, and the latter remains set up instead



[Copyright.]

**DISSECTION OF REPRODUCTIVE ORGANS OF
HERMAPHRODITE FOWL.**

Ovary, OV. Oviduct, O. Testicular Gland, T. Cloaca, C.
Intestine, I.

of falling over to one side. The bird will in many, though by no means all, instances succeed in imitating the crowing of a cock, and more rarely will chuckle hens towards an imaginary fragment of food and attempt to assume other functions that belong exclusively to a male bird. Looked upon at first as a curiosity, its quarrelsome disposition towards other hens, and its unproductiveness, soon cause it to fulfil its destiny, and, as Peter Boswell warns us, it "comes to no good," unless one may deem that in providing a meal for the owner it has, in a measure, atoned for an unprofitable life.

I have had the opportunity of opening and examining several hens reputed to be "crowers," and have invariably found that the taking on of the "secondary sexual characters" of the male, by which is meant the distinctive plumage, colouration, and head points of that sex, has been coincident with atrophy of the ovary, cystic disease, occlusion, or malformation of the oviduct. It may here be mentioned that fowls are not the only birds in which under like conditions of disease or deformity the male secondary sexual characters assert themselves in the hen. The peculiarity has been noticed in ducks, partridges, grouse, and especially in pheasants. The Natural History Museum at Kensington contains a specimen of a hen pheasant which in brilliancy of colouring, plumage, and tail feathers, is indistinguishable from a cock bird. In animals higher in the scale than birds and in the human species itself, the same manifestation of opposite sexual secondary characters has been observed to follow removal, injury, or malformation of the genital glands. A possible explanation of this consequence is that there is reason to believe that the internal secretions of those glands are not limited in their functions to the production of the germ-cells, but that by their presence or absence in parts of the body far removed from the place of their origin they influence the development or suppression of secondary sexual characters. And since these characters are bisexual in the same individual, it comes about, for example, in the case of the crowing hen, where the secretions of the ovary are modified or wanting by reason of ovarian disease or complete absence of that gland, secondary sexual characters (large comb, hackle, sickles, saddle feathers, and spurs), which we are accustomed to consider under normal conditions as pertaining to the male, make their appearance in the female.

These cases are common enough in the poultry-yard. They are the result, as I have pointed out, of disease or deformity congenital or acquired, and must on no account be considered as true or even imperfect hermaphrodites, unless their subsequent dissection proves them to have been so. The hermaphrodite state is, however, occasionally met with in poultry, and as the subject is one which is of interest if only through its bearing upon questions of inheritance of sex and of fertility, I give an account of such a bird, compiled from the notes of observations made during the greater part of its two years of life and of results observed after post-mortem examination.

The fowl, for we had better call it so to avoid the necessity of defining the gender, was sent to me in April, 1909, by Mr. J. H. Rolason, of Hands-worth, to whose kindness I am also indebted for details of its earlier history. He informed me that the bird was bought along with seven others as six-

months-old pullets, first cross White-Leghorn—Buff-Rocks, and hatched in March, 1908. At the age of six months—that is, when the birds were bought by Mr. Rolason—this one was almost in the full adult plumage of a pullet, and, except that its comb was slightly more prominent, there was nothing to distinguish it from its sisters in regard to sexual points.

From the outset, however, it was observed to be extremely wild and shy of its fellows, so much so that for some weeks it had to be fed specially alone, although it was housed only with pullets, no male bird being kept on the premises. Until the close of the year 1908 there was no reason to think the bird was not a pullet.

Early in 1909 it was noticed not to be laying as were the others, and was isolated for the purpose of verifying the suspicion. Then the comb began to thicken, and, with the wattles similarly developing, gave the head the character of a cock. No loss of the shyness, however, accompanied this development, and although the bird had not so far been heard to crow, it had a curious nervous trick of shaking its head several times from side to side every time it heard anyone imitate a cock's crowing.

In April, 1909, the bird was forwarded to me, and shortly afterwards, under conditions calculated to try the patience of any operator, the photograph which appears on page 502 was with difficulty taken.

The print shows a comb and wattles of marked dimensions, the former measuring $9\frac{1}{2}$ centimètres in length by 4 centimètres in height, well serrated, firm, and upright. Hackle some what accentuated, saddle and tail feathers a little fuller than one looks for in a hen, the appearance of spurs which a year afterwards were half an inch long and two rudimentary sickles at the summit of the tail suggested the male type, while the shape of the body, the carriage, gait, and cushion feathering were distinctly "henry." After a subsequent moult the plumage points were repeated, but in a lighter shade of buff.

The fowl was at first penned with two Dorking hens. The latter, on sight of the new arrival, certainly behaved as though they were under the impression that it was a male; but they soon lost that delusion, although in a few days the stranger commenced to crow, answering a Plymouth Rock cockerel which was housed close by, but out of sight. The modulation, tone, and rhythm of the crow were at first erratic, but in a few days grew to imitate that of the Plymouth so perfectly as to make it difficult to say at some distance away which was crowing.

The fowl was then transferred to the run containing the Plymouth cockerel and some eight or nine hens. Here it was treated with brotherly indifference by the male bird, and there was no sign of the usual "scrapping" that follows when a true male bird meets another under like circumstances. The hens, too, looked upon it as something which was neither liege lord nor rival, and it was spared that baptism of fire endured by every pullet at the hands of the jealous and resentful matrons of the seraglio that invariably follows its transference to an established breeding-pen. It never laid an egg, and it was never seen on a nest, nor, beyond occasionally calling round the hens to partake of a choice morsel, was it ever observed to show any preference for either sex. In the new run it ceased to crow, and lived in peace and sexual neutrality until it was killed in April of this year.

The post-mortem examination, as I quite anticipated, proved the fowl to have been an hermaphrodite, and the reproductive organs—or, as they are termed, the "primary sexual characters"—were found to be bisexual in type. A photograph of the dissection was kindly taken for me by my friend Mr. P. F. Davis, and readers will, I am sure, agree that he has once more given us an "interior" remarkable for perfection of detail.

The dissection includes parts of the vertebral column, of the thorax, and pelvis. The gizzard, liver, spleen, and all the intestine, with the exception of a small length (I.) opening into the cloaca (C.), were removed. On the left side, in its usual position, was found an ovary (Ov.) of the size and of much the same structure as that found in an undeveloped pullet. On the left side of the vertebral column also was an apparently normal oviduct (O.), its convolutions occupying the usual space from just below the ovary down to the point of junction with the intestine to form the cloaca. So far the number and disposition of parts were as they should be in a hen. But on the right side of the vertebral column (the left in the photograph) was found a balloon-shaped semi-solid gland (T.) measuring $2\frac{1}{2}$ c. by 2 c. by 1 c., portions of which on microscopic examination were seen to include rudimentary testicular substance. Passing down from this gland to open into the cloaca was a duct (the *vas deferens*) 5 c. in length, which is brought into greater prominence in the photograph by a piece of matchwood placed behind it.

The sexual complement of this hermaphrodite might be said, then, to consist of two complete sets of functionally-imperfect organs, that on the left side being of female, the other, on the right, of male type. Such a specimen is generally classed as an abnormal hermaphrodite. But the question immediately suggests itself, Is it not conceivable that the primitive sexual state was one of perfect hermaphroditism? In many plants and fishes true hermaphroditism is the rule, certain crustacean parasites of fishes fulfil in succession a male and female phase of the same life, and there are amphibia in whose secretory system occur at the same time both sperm- and germ-cells. And, as it has been so rightly insisted on by that brilliant philosopher Weininger in the opening chapter of his remarkable work "Sex and Character," it can be shown "that however distinctly unisexual an adult plant, animal, or human being may be, there is always a certain persistence of the bisexual character, never a complete disappearance of the characters of the undeveloped sex. Sexual differentiation, in fact, is never complete."

How far, then, are we justified, and, indeed, are we justified at all, in differentiating sex or in assigning it to any one region of the body? In such a complex creature as that we have been considering, how can such remote sexual traits as carriage and voice, gait and disposition, be explained except upon the assumption that what we call "sex" is something more universally distributed throughout the body than anatomists have hitherto allowed?

Weininger propounded the strange but plausible theory that every cell is endowed with so much "maleness" and so much "femaleness." His doctrine would at least explain bisexual variation in individuals and account for sexually intermediate forms. And who can say he was wrong?

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COMPILED BY EDWARD BROWN, F.L.S.

Compiler's Note.—With the object of securing as complete a list as possible of Poultry Books, it is proposed to give from time to time particulars as to such as are known. My own library embraces nearly 350 volumes on this subject, but there must be many not contained therein. I beg respectfully to request the kindly co-operation of owners of books not named, with a view to making the list exhaustive. In sending particulars I request that the following be stated: (1) Full title, and sub-title, if any; (2) Author's complete name, with any information respecting the writer; (3) Place of publication and name of publisher; (4) Date of publication, if given; (5) Number of edition; (6) Number of pages and size of book; (7) If illustrated; and (8) Whether in paper or cloth. Acknowledgment will be made of source of information. The books marked with an asterisk I have not been able to verify, and fuller details will be welcome both as to books and authors.

LIST No. 7 (Continued from page 446, May, 1910).

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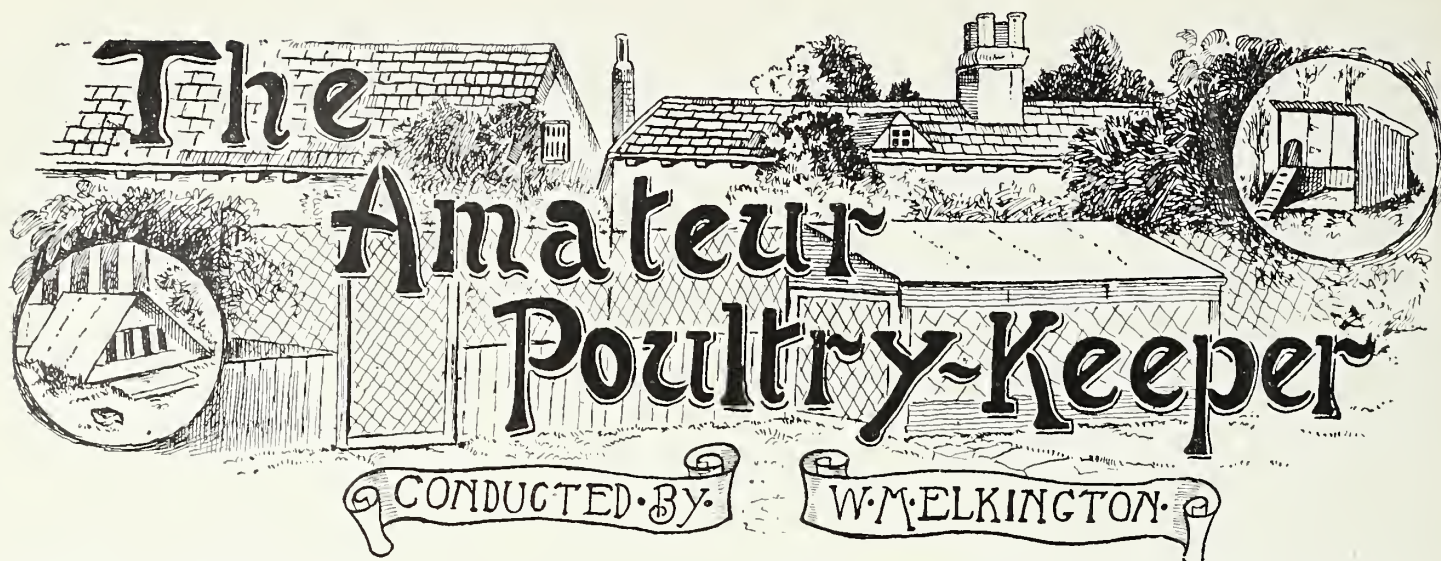
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(To be continued.)



Housing Accommodation.

The average amateur is very properly possessed of a desire to economise, and the man who is handy with tools naturally wishes to turn his talents to account by building his own fowl-house. I have known some succeed in this through being able to buy timber very cheaply, and I have in mind one man who has four very useful houses built entirely out of packing-cases. The cases were knocked to pieces and built up again in the form of a well-designed poultry-house; tarred felt was nailed in strips along the seams outside the building, and when the whole is tarred outside and limewashed inside any one of these four houses would satisfy the most exacting critic. On the other hand, I have known amateurs to buy new timber at an extravagant price from small dealers, and after pottering about and wasting time and material, find they could have bought the same thing (only very much more serviceable) from a manufacturer for considerably less than it has cost them. The big manufacturer buys his timber in bulk and at a comparatively low rate, so that, despite labour and advertising, he is frequently able to work cheaper than the amateur can do it himself. Therefore, if the latter is to effect any saving he must be in a position to buy timber cheaply, and as such timber as one gets in packing-cases is not the first-class article, he needs to be more than ordinarily handy with his tools to make a good job of it.

The Fresh-Air Design.

Apart from the material, the most important consideration in building a poultry-house is the design. We have long since bidden good-bye to the notion that fowls cannot stand a breath of fresh air, and the old style of closely shut-up houses has long ago been condemned to the scrap-heap. This is especially important to the amateur whose accommodation is generally more or less sheltered from the severity of the elements, and to adopt the closed-up type of house in such circumstances would be tempting Providence and putting a premium on diseases. Many people still adhere to the plan of accommodating a few fowls in a covered run with closed house attached, but this is now being superseded by the much more economical and healthful method of putting up an open-fronted shed with a southern aspect (if possible), and letting the birds

roost well at the back, out of the reach of rain and draughts. Some people are horrified when one recommends this plan. The idea of hens roosting in an open-fronted shed in winter makes them shiver with apprehension. But they must remember that they are keeping hens, not canaries. If they treat them in the same way as canaries they may succeed in making them as sensitive to cold. But it is not their nature. Read about the hens in the laying competitions that roosted in open-fronted houses all the winter and broke records in egg-production, and consider whether, if this plan gave such good results in an open, exposed situation, it should not prove even more satisfactory in an amateur's sheltered yard.

The Question of Space.

Some people ask how many fowls they can keep in a certain space. Often the area is extremely limited, and if the owners were to exercise their desires their poor birds would have no room to do more than stand still. This is one of those matters, however, upon which it is not desirable to draw hard-and-fast rules. It must be regulated by common sense. What the birds require in a small run, however, is scratching space and not mere standing room, for the smaller the enclosure is the more limited will be the incentive to take natural exercise, and the more difficult will it be to keep the birds in good health and productiveness. Therefore it is not so much a question how many birds can be kept on a given space (for if it comes to that a dozen hens might exist on twelve square yards), but how many can be maintained in fit condition to give a satisfactory return. Much depends, of course, upon the way in which the birds are managed, for an enthusiast will keep a dozen birds fit and well where a careless individual would fail with half the number. Therefore, though it may be suggested that half a dozen laying hens should do well enough in a scratching space of eighteen square yards, it depends so much on circumstances that, as I have mentioned, it is undesirable to lay down hard-and-fast rules. Let everyone consider the matter from the common-sense standpoint, but remember that a bare, uncovered, unlit, small space is no use at all for fowls. It must be converted into a scratching-shed in order to ensure that essential aid to health and productiveness—exercise.

Fowls and the Garden.

It is always pleasing to hear of a convert, and the other day I heard of a very enthusiastic gardener who from being a fowl-hater has become a fowl-lover. Of course, he regards poultry from the point of view of the strict horticulturist, according to their helpfulness or otherwise in growing produce. This gardener regards keeping poultry as the cheapest way of manuring the ground. He has tried the plan, mentioned in "The Amateur Poultry-Keeper," of dividing the garden into several plots, and alternating fowls and crops in rotation; but he prefers to keep his birds on one piece of ground for a whole year, forking it over once a month, and finally trenching it over two spits deep. He has grown some of the finest *Brassica* crops in the district on ground so treated, and besides making profit from the fowls has saved the cost of manure, which, as most amateur gardeners are aware, is a somewhat costly item in these days of motor traction. Then he takes good care of all the droppings in the houses. It is stored away under cover, and when required for use it is mixed with soil and leaf mould in sufficient degree for the particular crop required, for be it known that this gardener knows the strength of poultry manure and does not heap it round the roots of plants, as I have known some amateurs do. In a word, he sees in poultry-keeping an asset of great value, and I believe there are many more keen gardeners who will find it an extremely useful and profitable hobby to run in double harness with horticulture. Its possibilities are only being discovered, and we are yet, comparatively speaking, in the experimental stage. But there can be no doubt that this will be one of the leading lines of development in the near future, and we may some day see poultry-yards established as part of the necessary equipment of nurseries and market gardens.

BROWN LEGHORNS FOR AMATEURS.

By W. M. ELKINGTON.

THE Brown Leghorn has always been a popular breed with amateurs, although from an exhibition standpoint it is not, strictly speaking, one of the most convenient for small fanciers, for it is one of those in which double mating is imperative, and consequently a breeder who desires exhibition specimens of each sex must maintain two distinct strains. In most cases where the fanciers are amateurs or small breeders, attention is concentrated on one sex only for consideration of space, and thus whilst one man may make a name with cockerels another will become known for his pullets.

Apart from this the variety is all that one could desire for a small fancier, for it is interesting without being exceedingly difficult, it lends itself to confinement, and thrives in back-yard runs where many breeds would barely exist, and its colour is not easily spoilt when kept in the vicinity of large towns where the atmosphere is laden with smoke. That is why we find Brown Leghorns kept by so many working-men fanciers, for apart from the above-mentioned qualities, the birds are exceedingly beautiful, the bright colouring of the cock and the more sombre yet pleasing colour of the hen, with the large red combs, white lobes, and rich yellow

legs, combining to produce a very attractive picture, even in a small run among commonplace surroundings.

A beginner who may contemplate taking up Brown Leghorns for exhibition purposes would do well to commence with a small pen—say, three hens and a cock from a reliable breeder—selecting either cock breeders or pullet breeders, as his fancy dictates, but not attempting both, lest he may find the task of keeping the strains distinct and breeding good specimens of each beyond his ability. As this is not one



BROWN LEGHORN COCKEREL. [Copyright.]

of the ultra-fashionable breeds one can buy good stock at a very reasonable rate, and there is a good opportunity in this breed for any amateur who is keen on his hobby. From the utility standpoint, Brown Leghorns would hardly be classed in the same category as Whites or Blacks, because up to the present they have not received much attention from utility specialists, though there are many who would declare that as layers they are equal to any other variety. It is, of course, largely a matter of strain, but like all the Leghorns, they are the right stamp of fowls for laying—small bodied, with no waste tissue, active, non-sitters, and steady, often prolific, layers of large white eggs. Though they may not prove such hardy winter layers as some of the modern strains of White Leghorns when kept in a somewhat exposed position, it is hard to beat them in a small run where there is a certain amount of shelter, and that is one of the reasons why they are so popular with small fanciers. Then, again, they are economical, being comparatively small eaters and giving as great a return for it as any breed living. It is impossible to say much for them as table-fowl, for at the best the young cockerels are not to be reckoned even in the second class among table-birds, though they are useful enough on one's own table.

But, after all, in spite of its adaptability for the small poultry-keeper and its productiveness under what are often depressing conditions, the Brown Leghorn's crowning asset is its beauty. Other breeds may lay as well, but here is one that brings colour and joy to the drab surroundings of the back-yard run, and the humblest cottager may find in it a source of pleasure that few breeds of poultry would afford under the same conditions.

THE AMATEUR'S GUIDE FOR JUNE.

WITH the show season commencing, there is plenty of work for fanciers just now, though few amateurs manage to get good specimens in first-class condition at this time of the year, for the reason that the chickens are not sufficiently well de-

tered quarters. It is not much use depending upon the breeding-stock at the end of their season.

In regard to summer egg-production, the amateur, with his confined run, is at a disadvantage compared with the farmer, whose fowls, having a free range, find a lot of natural food and are kept at a low cost. Nevertheless, it pays even the amateur to produce summer eggs rather than let the hens be idle. Moreover, a busy layer will moult sooner than an idler, which is a great advantage for those who run hens on for two seasons, whilst for those who clear off their laying stock at the end of each season it is absolutely essential to get as much out of them as possible.

In June, however, that cannot be done by heavy feeding, and the chief difficulty is to avoid getting the hens too fat. Most people give their fowls more food than they require in summer, forgetting that the necessity for promoting bodily heat no



DANISH BROWN LEGHORNS.

[Copyright.]

veloped and the old birds, if they have been in the breeding-pen, are rough and weathered. There are many who believe that the amateur has no chance at the summer shows, and certainly he is greatly handicapped when competing with the big men who have an extensive stock and can keep a few good specimens in reserve specially for summer showing. To be successful an amateur must adopt the professional plan and keep his summer show birds in shel-

longer exists as in winter. A winter layer needs to be in good plump condition, but a hen will lay in summer even if comparatively poor, and this state is better for her. Let the birds have plenty of exercise, by all means, and in a small run I prefer to give all hard corn, though providing some variety by ringing the changes between wheat, oats, and dari. In addition it is a good plan to give vegetables, both green and cooked, but no stimulant, such

as meat, is necessary, unless the weather is chilly and the birds out of condition.

Eggs are cheap, and it pays better to put them into water-glass than to sell them at eighteen or twenty a shilling. Water-glass has become quite a national institution, and thousands of housewives buy a consignment of shop eggs, put them into the preservative, and take them out six months hence—sometimes approachable and at other times not. Why is it? Simply because shop eggs are not dependable, and the first rule in preserving eggs should be to have them quite fresh. A friend of mine ordered three hundred eggs from a farmer last summer, and as the purpose for which they were required was not explained, it may be assumed that the farmer must have made up the number with a few eggs that had become family heirlooms. At any rate, the jars were never opened, but in the following November a man was paid to take them away and bury them.

The moral is, never buy eggs for preserving unless you can make sure of getting them quite fresh. Moreover, do not keep your own eggs until you get a nice lot, but put them into the preservative every day or every other day, and take them from the nests early, so that hens do not sit upon them all day. When these precautions are taken the water-glass method will be found simple and cheap. With nine pints of boiling water to one pound of silicate the solution will be about the

right consistency, and when well stirred and cooled it will be ready for the eggs. Metal or earthenware vessels are best, and if the eggs are put in day by day they should be well covered with the solution. Finally, when the vessel is full, make it airtight and store it away in a cellar.

Those who hatch chickens this month must give them fresh ground to run upon. Unsatisfactory results will be experienced if they are reared on the same spot as the earlier broods. Keep them in the shade, and be sure to replenish the water-pot frequently. And that reminds me that the water supply for all sorts and conditions of stock is a very important matter in summer. Fountains are preferable (an inverted bottle, with the lip just below the level of a dish, will answer the purpose), but they must be swilled out with hot water once a week, and they should be placed in the shadiest part of the run, and where they are not likely to get filled with litter when the hens scratch.

Keep all shutters open at night, both for old and young stock. A closed-up house is nothing better than a death-trap in summer-time. In addition, give the interiors of the houses a dressing with lime-wash if it has not already been done. Use a syringe to spray it into the corners, in order to get rid of insect pests, though if it is to be used in this way the limewash must be strained through a fine sieve or coarse muslin.



Week Ending April 20.

Ducklings and spring chickens were very much in request. There was a fair demand for Asparagus chicken and Petits Poussins. Business generally was quiet. The shortage of English poultry was felt considerably, and buyers had to fall back on foreign supplies of cold-stored chicken. If London had depended on British production she would have fared badly. The foreign game trade was very slow. Although prices were low, small sales were effected. There was no change in the values of foreign eggs, but demand was fairly brisk owing to short arrivals; larger arrivals, however, were expected. The shipment of foreign eggs for week ending April 9 was 244,698 great hundreds. The Liverpool market for Irish was quiet. Values ranged from 7s. to 7s. 6d. At Manchester they realised from 7s. 6d. to 7s. 10d. English eggs were firmer, and ranged from 8s. 4d. to 9s. 6d. per 120 for extra selected.

Week Ending April 30.

The markets remained much the same as the preceding week. English poultry of all classes was scarce. Ducklings and spring chicken realised good values. Guinea-fowls met with fair trade. American cold-stored chicken met with a good demand, realising about 1s. per lb. Russian and Austrian chicken were very cheap. There was no material change in foreign eggs. Italians were scarce. The arrivals for week ending April 16 amounted to 296,309 great hundreds. On the Liverpool and Manchester markets Irish eggs were a shade cheaper, but official prices were not altered. English eggs remained at the same values as the preceding week.

Week Ending May 7.

English poultry was slightly more plentiful. Values were a little easier in consequence, but prime quality realised good prices. Asparagus

chickens realised from 2s. to 4s. each, and Guinea-fowls were in fair demand. A large volume of business was done in foreign poultry. Continental eggs remained unchanged, the demand being slow owing to plentiful English and Irish supplies. Pickling in Denmark was coming to an end, and values exhibited a weaker tendency. Irish eggs showed a downwards tendency on the Liverpool and Manchester markets. English eggs were inclined to be scarcer owing to farmers pickling for winter use, also, many were being stored for pheasant-rearing.

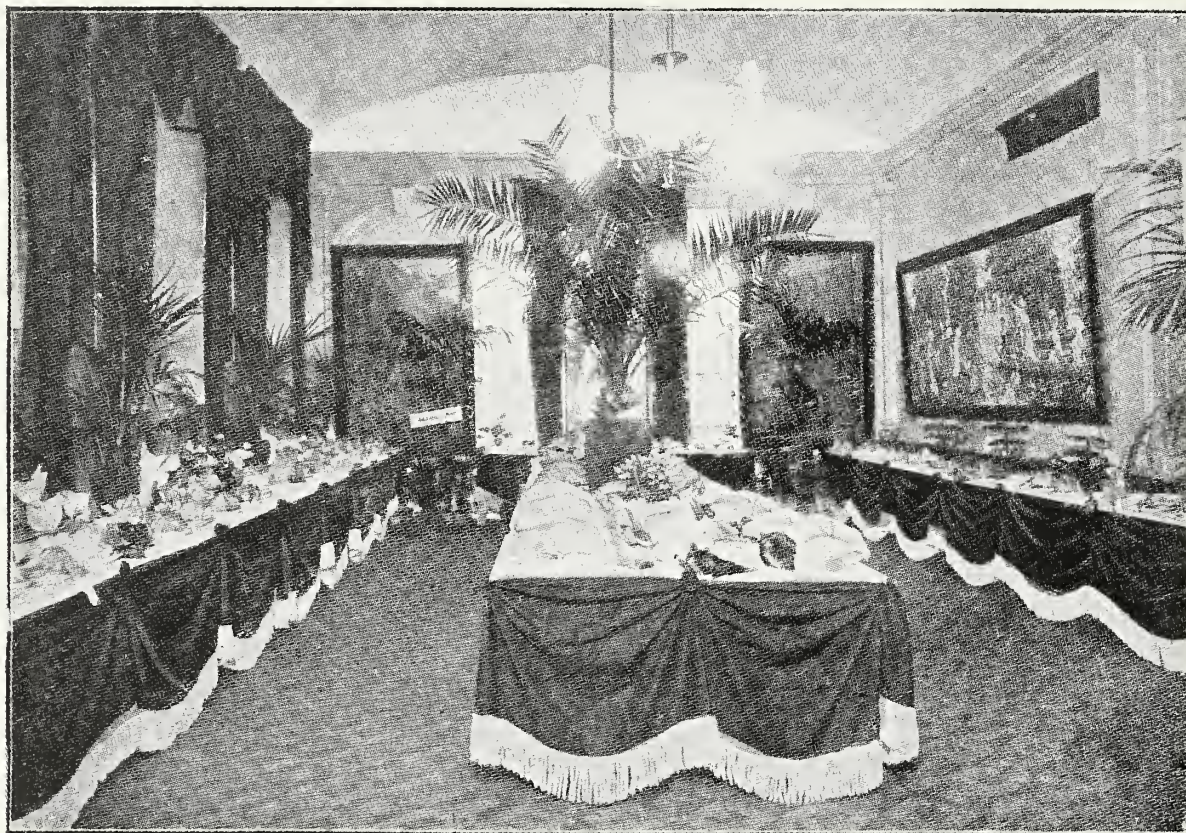
Week Ending May 14.

Business received a severe check owing to the death of King Edward. A few goslings were received, and met with quick demand, being a change. These realised from 5s. 6d. to 7s. 6d. each.

FOUR MONTHS' IMPORTS OF EGGS.

STRIKING INCREASE IN QUANTITIES RECEIVED FROM RUSSIA.

THE most striking feature revealed in the returns of the imports of foreign eggs for the first four months of the present year is the remarkable increase in the quantities received from Russia. Up to the end of April last we had received about six times as many eggs as during the corresponding period of last year. The mildness of the winter has been responsible for the increase and not any sudden extension of production in Russia, as might at first be supposed. A very slight decrease in quantities is recorded from Denmark, also from France and Austria-Hungary; a diminution is re-



DEAD POULTRY AT COPENHAGEN.

As is well known, the poultry industry in Denmark has developed mainly in the way of increased egg-production and better quality of eggs. As regards the fattening of poultry, very little advance has hitherto been made in the country, where most of the breeds kept are of a strongly marked oviparous type. During the last year some fattening establishments have been erected and some of the breeders are fattening fowls after the Sussex method, especially for home consumption. The above photograph shows one of the rooms, with fat poultry, at the last dead poultry show. The show was arranged by one of the poultry societies, and besides dead poultry there was exhibited a large collection of eggs from different breeds.

Ducklings were a shade cheaper. Russian fatted ducklings realised from 2s. 6d. to 3s. 3d. each. Plover eggs were cheap. The egg trade, both English and foreign, was very dull indeed in the early part of the week, but improved slightly towards the end. During the past two or three weeks money has been lost all round. The weather in Russia being warm, there was a big production. Three boats landed 12,000,000 Russian eggs, and it was reported that there were 72,000 cases awaiting shipment. The shipments of eggs into this country during week ending May 7 amounted to 393,309 great hundreds, as compared with 297,810 during the corresponding period of 1909. English eggs were scarcer, but values advanced but little owing to the check in trade.

corded, amounting roughly to 100,000 great hundreds and 169,892 great hundreds respectively. The increase from Russia has lowered the average of values of foreign eggs from 8s. 11½d., the figure at which it stood in 1909, down to 8s. 0¼d. per 120

Below we give figures for the four months ended April 30.

Countries of Origin.	Quantities. Gt. hds.	Values.	Average value per 120.
Russia.....	1,152,110	£390,777	6s. 9½d.
Denmark	892,864	422,991	9s. 5¾d.
Germany	300,035	115,464	7s. 8¼d.
France	298,254	153,880	10s. 3¾d.
Italy	408,576	197,975	9s. 8¼d.
Austria-Hungary	805,285	317,007	7s. 10¼d.
Other Countries	975,180	350,528	7s. 2¼d.

TABLE OF PRICES REALISED FOR HOME, COLONIAL, AND FOREIGN POULTRY, GAME, AND EGGS FOR THE FOUR WEEKS ENDING MAY 14, 1910.

ENGLISH POULTRY—LONDON MARKETS.

DESCRIPTION.	PRICES REALISED DURING THE MONTH.			
	1st Week.	2nd Week.	3rd Week.	4th Week.
Surrey Chickens	4/0 to 6/0	3/6 to 5/6	3/6 to 6/0	3/6 to 5/6
Sussex	4/0 " 6/0	3/6 " 5/6	3/6 " 6/0	3/6 " 5/6
Yorkshire	3/0 " 4/6	3/0 " 4/6	3/0 " 4/6	3/0 " 4/6
Boston	3/0 " 4/6	3/0 " 4/6	3/0 " 4/6	3/0 " 4/6
Essex	3/0 " 4/6	3/0 " 4/6	3/0 " 4/6	3/0 " 4/6
Capons	3/0 " 4/6	3/0 " 4/6	3/0 " 4/6	3/0 " 4/6
Irish Chickens	2/9 " 3/9	2/9 " 3/9	2/9 " 3/9	2/9 " 3/9
Live Hens.....	1/9 " 3/0	1/9 " 3/0	1/9 " 3/0	1/9 " 3/0
Aylesbury Ducklings..	3/9 " 6/0	4/0 " 6/0	3/6 " 5/0	3/0 " 5/6
Ducks	—	—	—	—
Geese.....	—	—	—	—
Spring Chickens	2/6 " 4/0	2/6 " 4/0	2/0 " 4/0	2/0 " 4/0
Guinea Fowls	2/9 " 3/3	2/6 " 3/3	2/6 " 3/3	2/9 " 3/3

ENGLISH GAME—LONDON MARKETS.

DESCRIPTION.	PRICES REALISED DURING THE MONTH.			
	1st Week.	2nd Week.	3rd Week.	4th Week.
Grouse	—	—	—	—
Partridges.....	—	—	—	—
Pheasants.....	—	—	—	—
Black Game	—	—	—	—
Hares	—	—	—	—
Rabbits, Tame	1/3 to 2/3	1/3 to 2/3	1/2 to 2/3	1/0 to 2/0
" Wild	—	—	—	—
Pigeons, Tame	—	—	—	—
" Wild	—	—	—	—
Wild Duck	—	—	—	—
Woodcock	—	—	—	—
Snipe.....	—	—	—	—
Plover Eggs.....	3/0 " 4/0 per doz.	3/0 " 3/6 per doz.	2/9 " 3/3 per doz.	2/0 " 2/6 per doz.

ENGLISH EGGS.

MARKETS.	PRICES REALISED DURING THE MONTH.			
	Per 120.	Per 120.	Per 120.	Per 120.
LONDON	8/4 to 9/6	8/4 to 9/6	8/6 to 9/6	8/9 to 9/9
Provinces.	Eggs per 1/.	Eggs per 1/.	Eggs per 1/.	Eggs per 1/.
MANCHESTER	13 to 15	13 to 15	13 to 15	13 to 15
BRISTOL	0/9 " 0/10 per doz.	0/9 " 0/10 per doz.	0/9 " 0/10 per doz.	0/9 " 0/10 per doz.

FOREIGN POULTRY—LONDON MARKETS.

COUNTRIES OF ORIGIN.	PRICES REALISED DURING THE MONTH.			
	Chickens. Each.	Ducks. Each.	Ducklings. Each.	Geese. Per lb.
Russia	0/6 to 0/10 lb.	2/6 to 2/9	—	0/6½ to 0/7
Belgium	3/6 to 4/6 each	—	—	—
France	—	—	—	—
United States of America	0/11 to 1/0 lb.	—	—	—
Austria	1/3 to 1/6 each	—	—	—
Canada	—	—	—	—
Australia	—	—	3/0 to 3/3	—

FOREIGN GAME. LONDON MARKETS.

COUNTRIES OF ORIGIN.	PRICE EACH DURING MONTH.	
	2/6 to 3/6	1/0 " 1/3
Capercaillie	0/8 " 1/1	1/0, 1/8
Black Game.....	0/3 " 1/0	1/0, 1/2
Partridges.....	1/3 " 1/6	0/5 " 0/8
Quail	0/4 " 0/9	—
Bordeaux Pigeons	—	—
Hares	—	—
Rabbits	—	—
Snipe	—	—

IMPORTS OF POULTRY AND GAME. MONTH ENDED APRIL 30, 1910.

COUNTRIES OF ORIGIN.	DECLARED VALUES.	
	Game.	Poultry.
Russia	£1,307	£3,024
Austria-Hungary.....	15	640
France	8	3,244
United States of America	—	19,358
Other Countries	12,785	7,954
Totals	£14,115	£34,820

IRISH EGGS.

DESCRIPTION.	1st Week.	2nd Week.	3rd Week.	4th Week.
	Per 120.	Per 120.	Per 120.	Per 120.
Irish Eggs	6/9 to 7/6	6/9 to 7/6	6/9 to 7/4	6/9 to 7/6

FOREIGN EGGS.

DESCRIPTION.	1st Week.	2nd Week.	3rd Week.	4th Week.
	Per 120.	Per 120.	Per 120.	Per 120.
French ..	8/3 to 9/0	8/0 to 9/0	8/0 to 9/0	8/0 to 9/0
Danish ..	8/0 " 9/0	8/0 " 9/0	8/0 " 9/0	8/0 " 9/0
Italian ..	7/9 " 8/9	7/9 " 8/6	7/9 " 8/3	7/0 " 8/6
Austrian...	6/0 " 7/0	6/0 " 7/0	5/6 " 6/9	5/6 " 6/9
Russian ..	5/3 " 6/4	6/0 " 6/6	5/6 " 6/3	5/6 " 6/3
Australian.	—	—	—	—
Canadian..	—	—	—	—

IMPORTS OF EGGS. MONTH ENDED APRIL 30, 1910.

COUNTRIES OF ORIGIN.	DECLARED VALUES.	
	Quantities in Gt. Hund.	Declared Values.
Russia	398,710	£125,012
Denmark	231,828	93,064
Germany	37,730	11,904
France	41,912	10,576
Canada	110,182	49,715
Austria-Hungary	195,998	68,912
Other Countries	193,182	68,737
Totals.....	1,206,542	£433,920

HOW TO KILL A CHICKEN.

DURING the twenty-four to thirty-six hours previous to killing, all food should be withheld from the bird, since it is extremely important that both crop and intestines shall be quite empty. With chickens and ducks twenty-four hours is long enough in cold weather, but better results are achieved if turkeys and geese receive no food for twelve hours longer. The reason of starving the birds is not only in order that they may be quite



empty of food and so remain fresh for a longer period, but it has the effect of improving the flavour and colour of the flesh. There are two methods of killing commonly employed—namely, by dislocation of the neck and by piercing the brain with the point of a sharp knife. In the former instance the bird is held in the left hand, grasping the hocks and long flight feathers, while the head is gripped between the first and second fingers of the right hand. By a firm but gentle pressure, the head is forced backwards and outwards until the neck breaks. Killing by knifing is rather more difficult to do, but it becomes simple with practice. The bird is laid upon its back on the table, and the point of a sharp knife is inserted into the brain through the slit

found in the roof of the mouth. In both cases death is instantaneous and painless. The bird continues struggling for some minutes, but this is merely the relaxation of the muscles. The advantage of the former method is that no blood is seen, whereas in the latter case a large quantity flows out of the wound in the mouth. Killing by knifing, on the other hand, possesses the advantage of leaving the flesh somewhat whiter, as the blood drains away more freely.

THE POULTRY CLUB STANDARDS.

THE fourth edition of this publication, which has just reached us, differs very considerably from the previous editions of 1901 and 1905, in that the work has been greatly enlarged as regards the breeds included, and the standards have been virtually rewritten. The late Lewis Wright wrote the introduction to the last two editions, and that authority's observations are included in the present introduction; but Mr. W. W. Broomhead, who is now editor of the publication, has supplemented the existing matter with some useful explanations of his own, and the standards themselves owe to his penmanship a refreshing freedom from the stereotyped phrasing and repetitions of ordinary standards. One particularly commonsense feature is the omission of the word "size." As Mr. Broomhead remarks, to describe size—for instance—as "about 6lb," is obviously absurd. And though weights are given, he utters a word of warning against breeding for mere weight. The varieties and sub-varieties that have not yet been accepted by the Poultry Club (a list of these is given) are necessarily omitted from the standards, but otherwise the book, with its excellent glossary, contains everything that the novice and the advanced professional can need. It is published at a shilling, and can be obtained direct from the hon. secretary of the club, Mr. G. Tyrwhitt-Drake, F.Z.S., for 1s. 3d., post free.

THE BROWN LEGHORN CLUB.

THE Year-Book of the Brown Leghorn Club, which makes a rather belated appearance, discloses a condition of affairs that is satisfactory enough to excite the envy of less fortunate specialist bodies, for several of whom 1909 was an indifferent year. It is true that the membership is 63 as against 81 at the beginning of the year, but the former total includes only the fully paid-up members, and not the doubtful cases of those who have neither resigned nor paid their subscriptions. The balance-sheet shows a surplus of £12 15s. 10d., as against £5 3s. 1d., and a small profit was made on the last Club Show. Mr. R. Hay Wilmot is president for the current year, and Mr. Thomas Robinson succeeds Mr. J. W. Morton in the office of hon. secretary and treasurer, which the latter has filled with such conspicuous success.

THE UTILITY POULTRY CLUB COMMITTEE.

MEMBERSHIP.—Fifty-six persons were elected members of the club.

THE HONORARY TREASURER.—The hon. secretary reported that Mr. W. M. Macbeth had given notice

that, owing to pressure of work, he would be unable to stand for re-election to the treasurership at the annual meeting in October. It was agreed to give notice of the vacancy to the members by means of the third circular.

THE PROPOSED POULTRY INSTITUTE.—Messrs. B. W. Horne and C. E. J. Walkey were nominated to represent the club at the meeting to consider this project.

PRIZES AND SPECIALS.—On the proposal of the hon. secretary the following special prizes were granted: Betley and District Show, 10s., dressed poultry; Frome District Agricultural Show, 10s., table-poultry; Northleach Agricultural Show, 10s., table-poultry.

NORTHERN FOUR MONTHS' COMPETITION.—The hon. secretary reported that seven competitors had applied for, and had had returned to them, half their entry-fee. It was agreed not to make any further payment in respect to management.

TWELVE MONTHS' LAYING COMPETITION.—Mr. B. W. Horne reported that he had received a communication from the Education Department of the Lancashire County Council, that the Farm Committee were unable to recommend the holding of the Club Laying Competition at Hutton, and it was agreed that a circular letter be sent to the chief Agricultural Colleges to inquire if they would entertain a proposal to take on a competition free of financial liability to the club.

REGISTER OF POULTRY PRODUCE.—The leaflet which had been printed and sent to County Council Lecturers and Agricultural Colleges, calling attention to the Register of Poultry Produce, was brought before the Committee and approved. It was reported that the Somerset County Council had printed and distributed a similar leaflet adapted to the particular requirements and exigencies of the county.

L. W. H. LAMAISSON,
Hon. Secretary.

Merstham, Surrey, May, 1910.

THE POULTRY CLUB.

THE monthly meeting of the Council was held on May 13, at 2 p.m., at the London Chamber of Commerce, Oxford Court, Cannon Street, London, E.C., when there were present: Mr. H. Wallis (in the chair); Messrs. L. C. Verrey, W. W. Broomhead, W. Bibby, T. Firth, W. J. Harrington, T. Threlford, W. Richardson, W. J. Golding, F. Bateman, J. Horn, W. A. Jukes, P. H. Bayliss, G. F. J. Wyndham, F. J. Broomhead, F. J. S. Chatterton, W. M. Bell, F. D. Little, and G. Tyrwhitt-Drake (hon. secretary and hon. treasurer).

The minutes of the April Council meeting were read and confirmed.

Before commencing the business of the meeting, Mr. L. C. Verrey proposed, "That the Council of the Poultry Club in meeting assembled this day beg respectfully to tender to Her Majesty Queen Alexandra their profound sympathy with her in her great bereavement."

Several new members were elected.

The following shows, having been announced to be held under Club rules, and the judges thereat having been considered satisfactory, specials were accordingly allotted: Inverurie, Sussex County,

Horsham Fat Stock, Haywards Heath, and Kenilworth.

Messrs. L. C. Verrey and W. A. Jukes were appointed to act on behalf of the Club on the preliminary committee of the proposed National Poultry Institute and Experiment Station.

A letter was read from Mr. H. Abbot, Thuxton, Norfolk, tendering his resignation as a vice-president and member of the Club, and the same was accepted.

An application from the Manx Poultry Club for permission to allow birds to wear the ring of that club at shows held under the rules of the Poultry Club was considered, and permission was granted.

The next meeting of the Council will be held at the London Chamber of Commerce on June 10. Names of prospective members and affiliated societies, with subscriptions (which must be paid in advance) must reach the hon. secretary on or before June 1, or, if the would-be member resides in a county having a branch, through the hon. secretary of that branch.

FREDERICK J. BROOMHEAD,
Vice-President.

G. TYRWHITT-DRAKE,
Hon. Sec. and Hon. Treasurer.
Cobtree, Sandling, Maidstone.

THE BUFF ORPINGTON CLUB.

A COMMITTEE Meeting was held at Oxford Court, Cannon Street, London, E.C., on Friday, May 13th, 1910.

PRESENT: Mr. Frank Bateman (Chairman), Mrs. Frank Bateman, Messrs. W. M. Bell, W. Richardson, H. Dickson, and W. J. Golding (hon. sec.).

MINUTES.—The Minutes of the last Committee Meeting were read and confirmed.

APOLOGIES for inability to attend the meeting were read from Messrs. F. Bloomer, W. G. French, and W. Evans.

Arising out of the minutes of the previous meeting, the hon. secretary reported that the exhibitor had appealed to the Poultry Club against the decision of the Committee withholding the Novice Cock or Cockerel Challenge Cup from him, and the Poultry Club had decided the case in the Club's favour, the Club's definition of a Novice distinctly stating that the cup was restricted to members only.

NEW MEMBERS.—The following were elected members of the Club: Mr. Norman Whitworth, Northallerton; Mr. R. E. Weismüller, The Rock, Frodsham; Mr. L. R. Webb, Lambourne End, nr. Romford; Mr. J. A. Barff, Winchfield, Hants.

It was decided to hold the forthcoming Club Show in conjunction with the Combined Specialist Club Show, to be held in the Drill Hall, Sheffield, on December 7th and 8th next, on the conditions named.

It was resolved that the usual grant be offered Haywards Heath to increase the prize-money in the Buff Orpington classes.

A Club Special was granted to the forthcoming show of the Women's Agricultural and Horticultural National Union, confined to lady members of the Club.

In accordance with a resolution passed at the last annual general meeting, the hon. secretary was instructed to issue ballot papers for election of one

judge for the Dairy Show and two judges for the Club Show. Mr. T. Threlford was appointed scrutineer.

With a hearty vote of thanks to the chairman for presiding, the business of the meeting closed.

W. J. GOLDING,

Hon. Secretary.

Westwood Farm, Weald, Kent.

NATIONAL POULTRY ORGANISATION SOCIETY.

THE monthly meeting of the executive committee was held at 20, Arlington Street, W., on Friday, May 6, 1910.

PRESENT: The Marchioness of Salisbury (in the chair), the Dowager Countess of Arran, Sir F. A. Channing, Bart., M.P., Mr. E. T. S. Dugdale, Mr. B. W. Horne, Colonel Van de Weyer, Colonel R. Williams, M.P. (treasurer), Mr. Edward Brown, F.L.S. (hon. secretary), Mr. V. Carter (organising secretary), and Mr. F. A. Hazlewood (assistant secretary). Apologies for non-attendance were received from Mr. R. Armitage, M.P., Mr. C. E. Brooke, Lady Helen Munro-Ferguson, and the Hon. Mrs. Wilmot.

MINUTES of previous meeting were read, confirmed, and signed.

DEATH OF SIR WALTER PALMER, BART.—Resolved, on the proposal of Lady Salisbury, seconded by Colonel R. Williams, M.P.: "That the Central Executive Committee of the National Poultry Organisation has received with deep sorrow the announcement of the death of Sir Walter Palmer, Bart., a Vice-President and one of its earliest members, and desires to place on record its sense of the great services and generous support given by him to the Society and the poultry industry generally, which have contributed so greatly to the success of the work it has undertaken."

FINANCE.—Monthly statement of receipts and expenditure and auditors' report for 1909 were submitted, and accounts presented for payment and approved.

NEW DEPOTS.—Applications for affiliation were received from six local depôts, and sanction given to the following: Chirbury and District Collecting Depôt, Ltd., Minsterley and District Egg and Poultry Depôt, Ltd., Woburn Sands and District Egg and Poultry Society, Ltd. The others were referred for future inquiry.

BRANCHES AND DEPOTS.—Reports from various societies were submitted.

WELSH TOUR.—The hon. secretary submitted report of the South Wales Egg and Poultry Demonstration Train, and satisfaction was expressed at its success. Thanks to the Great Western Railway Company for its excellent arrangements were passed. It was further resolved that a suggestion be made to the Board of Agriculture and Fisheries that its poultry leaflets should be issued in Welsh.

MARKETING.—Memoranda on this question, in view of the great extension of the Society's operations, were submitted, but held over for further consideration.

FOXES AND POULTRY.—The meeting with the Committee of Masters of Foxhounds' Association on April 12 was reported.

NATIONAL POULTRY INSTITUTE.—Mr. R. Armitage, M.P., and the Duchess of Somerset were appointed to represent the Society on the Preliminary Committee of the proposed National Poultry Institute and Experiment Station.

ANNUAL MEETING.—A draft of the annual report was submitted and approved, as were arrangements for the annual meeting on May 31. Note.—In consequence of the death of King Edward, the annual meeting has been postponed until a later date to be announced.

EXECUTIVE COMMITTEE.—Various nominations for the committee were submitted and considered.

MEMBERSHIP.—The following ladies and gentlemen were elected.

MEMBERS OF COUNCIL.—Miss Barwell, Barkford House, Billingshurst, Sussex; Mr. Tom H. Mackinnon, Habberley Hall, Pontesbury, Salop; Mr. B. Reeve, 38-39, Half Moon Street, Piccadilly; Mr. Jushi. Saigo, 1, Lygon Place, Ebury Street, W.; and Lieut.-Colonel the Hon. H. Trefusis, Porthgidden, Devoran, Cornwall.

MEMBERS.—The Duchess of Buckingham and Chandos, 8, Hyde Park Gardens, W.; Mr. J. A. Devenish, Staverton, Devon; Mr. W. R. Hawkins, Pure Cupil Llanilltem Street, Fagans, Glam.; Mr. W. A. Marshall, Primrose Cottage, Rexeth, Harrow; Mr. F. Pledge, The Manor House, Crawley, Winchester; Mr. E. R. Pratt, Ryston Hill, Downham, Norfolk.

EXPORT TRADE IN LIVE STOCK.—Announcement was made that the President of the Board of Agriculture had appointed a Departmental Committee on Export Trade in Live Stock, and that the hon. secretary had been invited to give evidence.

EDWARD BROWN,

Hon. Secretary.

Regent House, Regent Street, W., May 9, 1910.

DUTCH POULTRY SOCIETY.

THE Second National Congress connected with the above society will be held in the Royal Zoological Botanical Garden at The Hague on August 1st and 2nd.

The Dutch Poultry Society consists of three classes of members, viz.:

(a) Members who contribute 4s. per annum to the funds of the Society.

(b) Favourers consisting of those who contribute 8s.

(c) Donatists consisting of those who contribute £2.

The Congress will be divided into four sections, the first section dealing only with the scientific side of poultry-keeping. The papers read under this heading at the Congress will deal with such questions as "The Laws of Heredity," "The Fixing of Poultry Types," and "The Organisation of Poultry Courses with Scientific and Practical Instruction." The second section deals with the technical side, and includes veterinary inspection of poultry, and the treatment of diseases, and the feeding, fattening, and marketing of poultry. The third section is devoted to practical work in the poultry yard, while the fourth section deals with the sporting aspect. The papers will be read by experts and a discussion will take place at the close of each. Full particulars can be obtained from the Secretary, S. Spanjaard Lzn, Groothertoginnelaan 40, The Hague.

ANSWERS TO CORRESPONDENTS.

The Editor will be glad to hear from readers on any Poultry Topics, and all Queries addressed to the paper will be answered if possible in the issue following their receipt. The desire is to help those who are in any difficulty regarding the management of their poultry, and accordingly no charge for answering such Queries is made. Unless stated otherwise, Queries are answered by

F. W. PARTON,

Lecturer in Aviculture, The University, Leeds.

Feeding Turkey Chickens.

Will you please tell me what are the best foods for turkeys until they are three months old?—F. G. R. (Dumfries).

The food for the first five or six days may consist of hard-boiled eggs, finely chopped, mixed with biscuit-meal or bread-crumbs moistened with milk. The egg food should be left off gradually, giving in its place a cooked food mixed with rice boiled in milk. When about a fortnight old, a little dari, groats, or buckwheat should be thrown down, and, most important of all, young onions finely chopped. All kinds of tender green food are useful, but meat minced with the soft food for the first three months is absolutely necessary. With this one exception, the same foods as used for the other poultry may be given to the young turkeys. The dry method is unsuitable for turkeys.

Breeds for Clay Soil.

I live on a heavy clay soil, and find that Dorkings do not answer well. Will you please tell me what are the best pure breeds for such conditions?—H. T. (Filey).

From the fact that you attempt to rear Dorkings, we take it that table qualities are your chief aim, and for this purpose on a heavy clay soil Dorkings are quite unsuitable; in fact, under such conditions, the best class of table chickens should not be kept. A light sandy soil is essential to rapid growth. We would recommend a general purpose breed, such as Plymouth Rocks, Buff Orpingtons, or Wyandottes.

Water for Ducklings.

Is drinking-water beneficial or not for young ducklings?—Is milk better; and if so, should it be given sweet or sour?—T. M. (Haverhill).

Drinking water is necessary for ducklings, and should be given during the fattening process after they have had their feed; a bowl of water filled almost to the top with coarse gravel will answer the purpose. Milk may, however, be used in small quantities, and it must be sweet. But it is usually found that they will fatten very rapidly without milk, as they are such enormous eaters.

Dry Chicken-Feeding.

Please tell me if you approve of dry-feeding for young chickens, and if so, what is a good mixture?—R. M. B. (Norwich).

If chickens are to be reared to their full growth for breeding purposes, dry grain may be exclusively used up to the age of five or six weeks; but when

the chickens are destined for early marketing for the table, a combination of the two systems of feeding is preferable from the commencement, making soft food their staple diet. But for whatever purpose chickens are intended, after they reach six weeks old they should be given two feeds a day of soft food, one in the morning and the other during the afternoon. There are several very good mixtures of dry foods on the market. The following can be recommended: Three parts broken wheat, two parts dari, two parts canary seed, two parts millet, two parts coarse oatmeal, one part broken maize, half part hempseed, half part buckwheat, one part rice, one part meat scraps, and one part grit.

Black Duck Eggs.

Some of my ducks are laying eggs the yolks of which are black, and I cannot account for it. They tell me that the water here is quite normal and the ducks are fed principally on crushed oats. I may say that the hen eggs are also very dark.—J. A. (Chelmsford).

In the three eggs submitted to us the yolks were in shades of colour from a light grey to a very dark slate. Both yolk substance and membrane were pigmented, but the eggs were perfectly fresh and free from any trace of odour. The condition probably arises from the blood being charged with certain mineral salts, such as permanganate of iron, derived from some kinds of clay soil. This is, we think, the explanation of the mystery, for although there are grains and vegetable known to influence the yellowness of yolks, we have never known them blackened from that cause. You might try the experiment of penning some of your ducks and poultry off the land, and observe the result on the eggs. We fear there is no other remedy.

H. B. G.

Short Replies.

M. R. T. (Clare): 1904.

D. T. B. (Barnet): We do not know.

E. L. (Stoke): 1. From 20 to 30 per cent. 2. No.

R. M. G. O. (Braintree): 1. Yes. 2. Yes. 3. Ducks.

H. W. R. (Ilford): The Silver Grey or the Dark varieties.

O. M. (Watford): Single comb; fairly large and evenly serrated.

G. B. D. (Newport, Mon.): Buff Orpington or White Wyandotte.

W. T. (York): "The Amateur Poultry-Keeper." Price 1s. 2d., post free, from this office.

TRADE NOTICES.

Some Food Samples.

We have received from W. Holmes Hunt, of Hellingly, Sussex, samples of his "Unbeatable" dry chick feed, which, he informs us, is finding a very ready sale and giving great satisfaction. The samples appear to us to be particularly free from dust



One Day's Consignment of Stock Birds from Mr. Holmes Hunt's Poultry Yard.

and to contain nothing but sound and good-quality grain. Mr. Hunt prepares two kinds of dry chick feed—No. 1, for chickens up to five weeks of age; No. 2, for chickens beyond this stage. A free sample will be sent on receipt of a postcard.

The Poultry Farm, Catforth.

Mr. Tom Barron, the owner of this establishment, which is situated near Preston, has achieved a reputation for his laying strains of White Wyandottes and Leghorns, Buff Rocks, and Buff Orpingtons. The conditions and terms of business in eggs for setting and chickens are fully set forth in an attractive little annual catalogue, and attention is drawn to the fact that he has aimed, with success, at securing both good laying qualities and size of egg in the breeds that are suited to a heavy soil. The Catforth Farm is three miles from Lea Road Station, and prospective customers can be met by appointment.

Mr. Tamlin's Exports for April, 1910.

The following is a list of Mr. Tamlin's exports for the month of April, 1910: Eighteen 60 and fourteen 100 foster-mothers, six 60 and ten 100, also three 200 incubators, also one 30 ostrich incubator, to M. André Masson, France; ten 30 incubators, six 60 incubators, to Melbourne, Australia, per ss. Star of Canada, order of Keep Brothers; sixteen 100 incubators, ten 60 incubators, ten 100 foster-mothers, to New Zealand, per ss. Marene, order of Willis, Sindall, and Co; six 60, six 100, and six 30 size incubators, to J. F. Marshall, South Africa, per ss. Inkosi; six 100, six 60, and six 30 incubators, to Mr. Mascarenhas, Portugal, per ss. Perim; six 100 incubators, two 30 ostrich incubators, to Oakes and Co., India, per ss. Mom-

bassa; one 60 incubator and one 100 foster-mother, to Thien A. L. Kwee, China, per ss. Poona; twelve 100 incubators and six 100 foster-mothers, to Fletcher Bradley, Canada; one 100 incubator, and one 100 foster-mother, to H. Stevenson, Sweden, per ss. Sita; one 60 incubator and one 60 foster-mother, to A. Robinson, Turkey; one 100 incubator, also one 200 incubator, to Florent Frères, Belgium; one 100 incubator, to A. Oliveira, Spain, per ss. Don Hugo.

SELECTIONS FROM CONTEMPORARIES.

Onions for Chickens.

A very useful vegetable for chickens is the onion. The tender and juicy part of the leek stem, generally rejected when the vegetable is prepared for home use, is very beneficial, and does well when chopped up and mixed with soft food for the birds. The tops of chives and scallions cut up, and the thinnings of the summer onion beds should all be utilised for chickens. Onions not only have a good effect on the lungs and bronchia, but they prevent many ailments to which chicken flesh is heir. They are far more beneficial for chickens, in fact all kinds of fowls, than many people imagine. We have again proved them to be of great service where gapes are feared, and this season we are using them freely in the food of some birds we are rearing on land that we were told was "poison" to chickens. It is said that onions taint the eggs of hens which partake of them. They do, when the vegetable is overdone, and this can be very easily demonstrated. But it is not the case when they are given in a common-sense way: and they certainly do not flavour the flesh of chickens which freely partake of them. —*Poultry.*

The Value of Animal Food.

The use of some kind of animal food is very beneficial in many ways. By the regular use of it eggs can be got much earlier in the season. The baneful habit among fowls of feather-picking can usually be traced to lack of animal food, and if any hens start this habit it is a good plan to give them scraps of meat to pluck at. Boiled sheep's paunches, well washed and cleaned before boiling, and mixed with the morning soft feed, is a capital food for rearing young ducklings, also for stock ducks as well as fowls. Green-cut bone is one of the chief forms of animal food, and although it is termed "green," care must be taken that it is not in this state when given, else it will prove very injurious to the fowls partaking of it. This class of food given two or three times a week will greatly benefit fowls, inasmuch as fresh-cut bones contain all the component parts that go to make up a "new-laid egg." The phosphates (lime) found in bones are of great value for shell-making, while the meat, marrow, and gristle form the white and yolk of the egg. Fresh-cut green bone should not be mixed amongst the birds' soft food, but should be given at noon as a feed by itself, allowing from one-half to one ounce each bird, according to the time of the year. Where a large number of fowls